

AeroLEDs LED Installation Forum

Tips and Tricks for installing and
troubleshooting LED light
installations

Why LEDs?

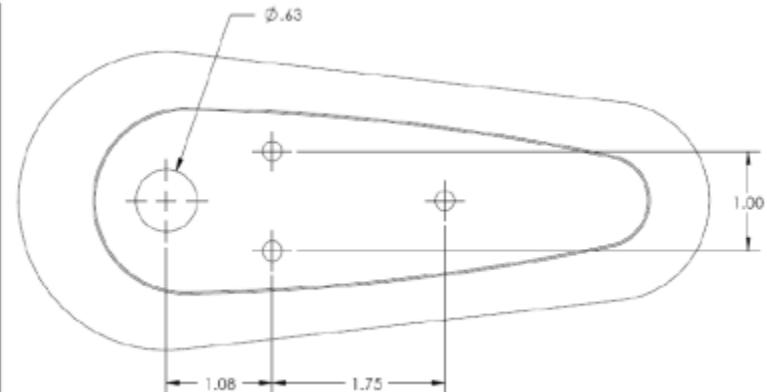
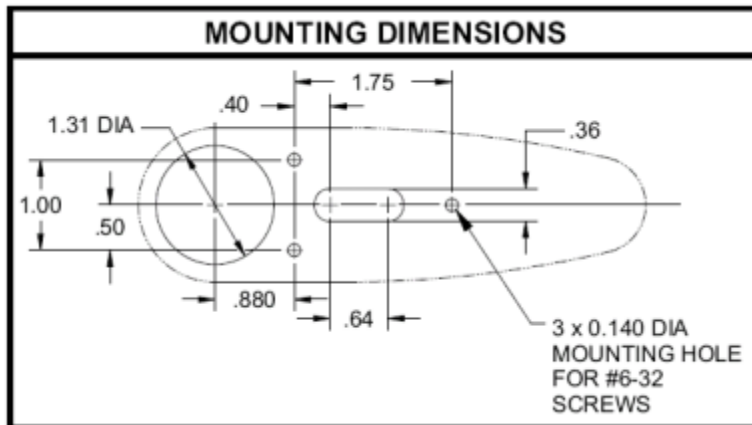
- LEDs are more efficient than incandescent sources
- LEDs last much longer than incandescent or Xenon sources
- LEDs enable more elegant and compact designs
- LED's don't require life limited flash capacitors for strobes or separate ballasts for landing lights

LED Wingtip Light Installations

- AeroLEDs wingtip lights are designed to match the size and mounting footprint of legacy incandescent/Xenon position/anti-collision lights
- AeroLEDs wingtip lights are self-contained, and do not require external power boxes, which saves weight and space

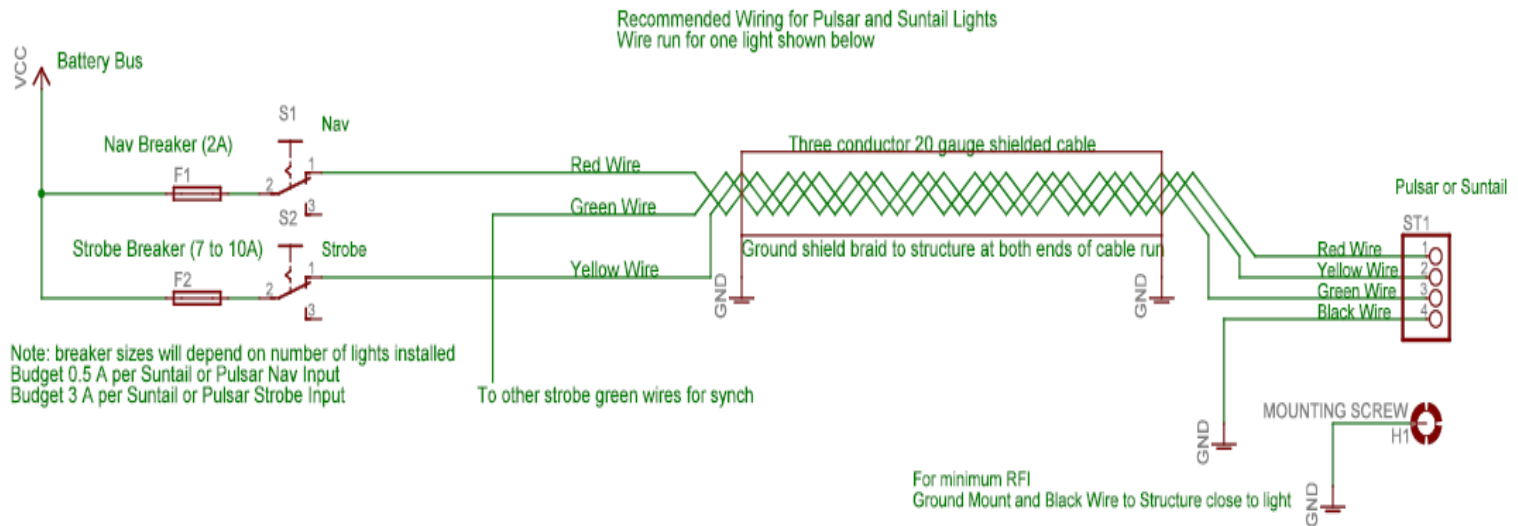
LED Wingtip Light Installations

- Pulsar and Pulsar EXP mount to same footprint as the Whelen A600



LED Wingtip Light Installations

- Wiring is important for preventing RFI interference and near-field coupling

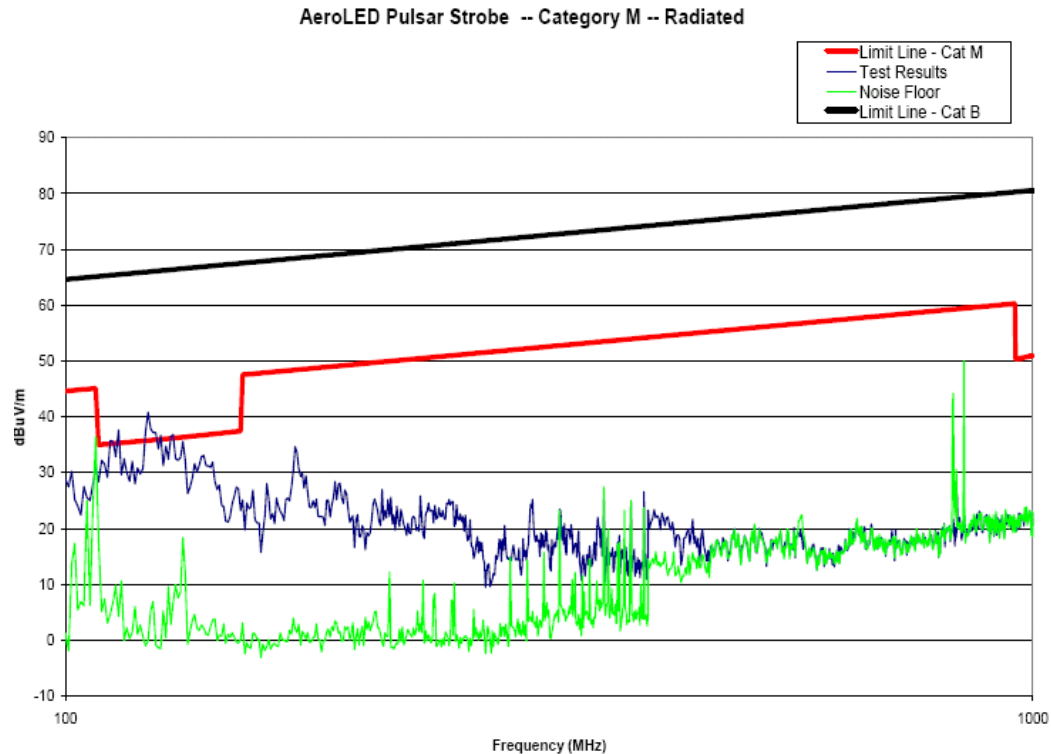


LED Wingtip Light Installations

- Use shielded wire, ground shield at both ends; “path of least inductance” shield
- Ground body of light to structure using mounting screw (remove anodization from screw well)
- Connect black ground wire to structure ground within a few feet of light location
- Keep antenna RG coax cable spaced at least 1 inch from other wires (especially strobe) to prevent near-field coupling

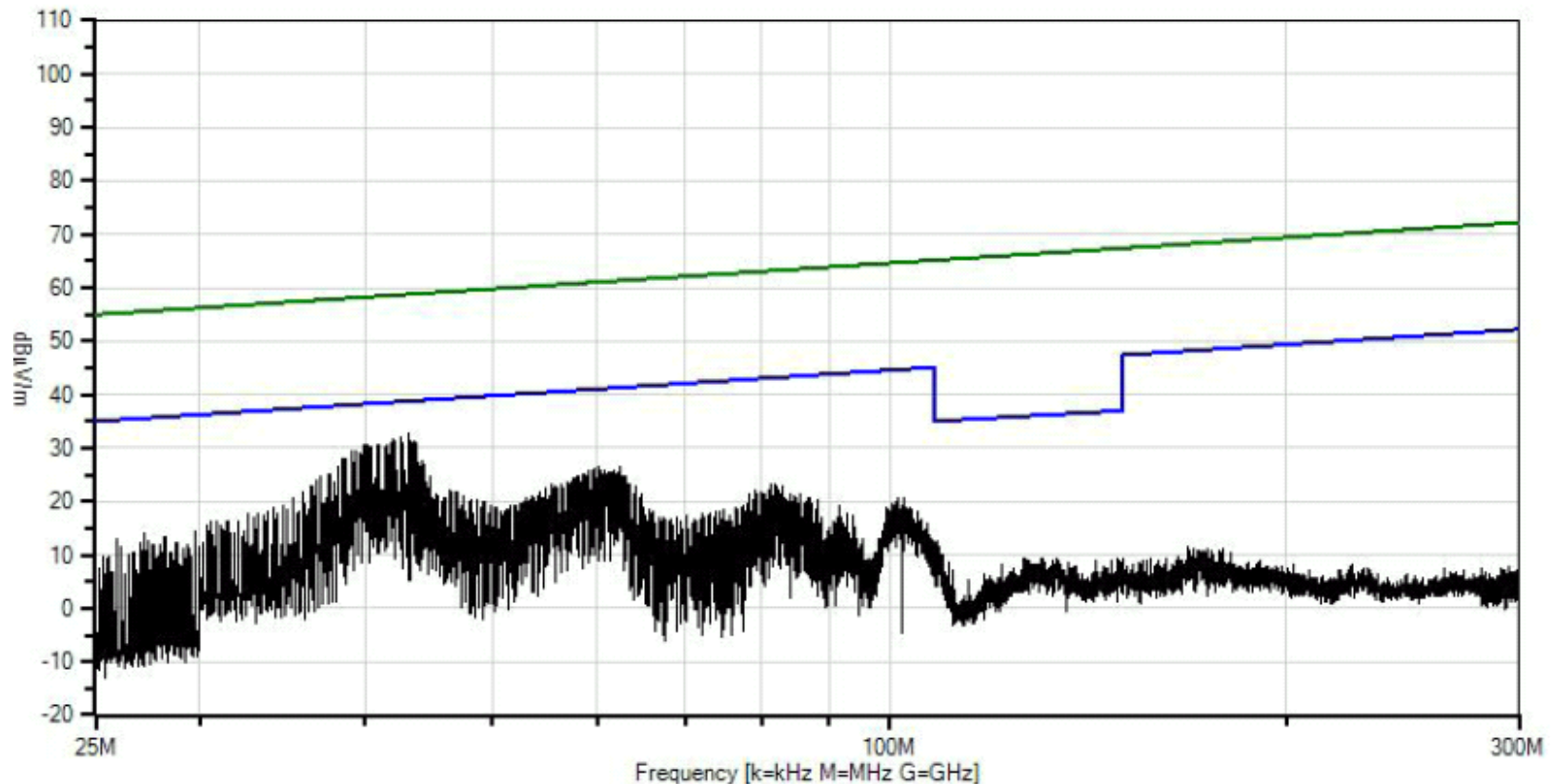
LED Wingtip Light Installations

- RFI emissions with ground wire terminated at fuselage



LED Wingtip Light Installations

- RFI emissions with ground wire and mounting ground terminated together close to light



LED Wingtip Light Installations

- RFI interference will show up as noise that breaks squelch on the radio, and appears on specific frequencies, but not on every frequency
- Audio frequency noise will show up in the intercom regardless of radio tuning or squelch setting

LED Wingtip Light Installations

- Audio frequency noise conducts through the wiring, and enters the intercom through audio panel connections from other equipment, how wiring is routed plays a big role in susceptibility
- Adding a 1000 μF 50V capacitor from the yellow strobe wire to ground near the strobe can eliminate audio frequency noise at the source
- If audio frequency noise persists, you must determine which audio connection(s) the noise is entering the intercom through

LED Wingtip Light Installations

- To troubleshoot audio noise entering the intercom, disconnect each audio input individually while the strobes are running to see if noise is entering through that connection
- A line filter can be put in series with an audio connection to eliminate ground loops that bring noise into the audio amplifiers, including noise from non-strobe sources such as EFIS systems

LED Wingtip Light Installations

- An AeroLEDs customer reports that this Crutchfield PAC SNI-1/3.5 Noise Filter works well to eliminate ground loop noise on audio inputs coming from both the LED strobe and his Garmin EFIS



LED Wingtip Light Installations

- Pulsar NS90 is the most popular solution for Van's RV's along with the Suntain



LED Wingtip Light Installations

- Pulsar mounted on a Lancair Legacy wingtip



LED Wingtip Light Installations

- Pulsar EXP on Jabiru wingtip



Sunlite Installations

- Leading edge installation on Rans S-19



- Leading edge installation on RV using AeroLEDs bracket



Sunray Plus Installation

- RV9-A wingtip Installation (30,000 candela tight beam on just 10 Watts) instead of 50W MR16



Sunspot 36 Installations

- Ravin wingtip (with Microsun recognition and Pulsar NS90)



Sunspot 36 Installations

- Aviat Husky A-1C Leading Edge



AeroSun 1600 Installations

- Van's RV Duckworks tray mounting kit using AeroLEDs bracket



AeroSun 1600 Installations

- Kitfox wingtip



- RV-7 wingtip



Microsun Installations

- Zenith leading edge cuff



- Van's RV wingtip



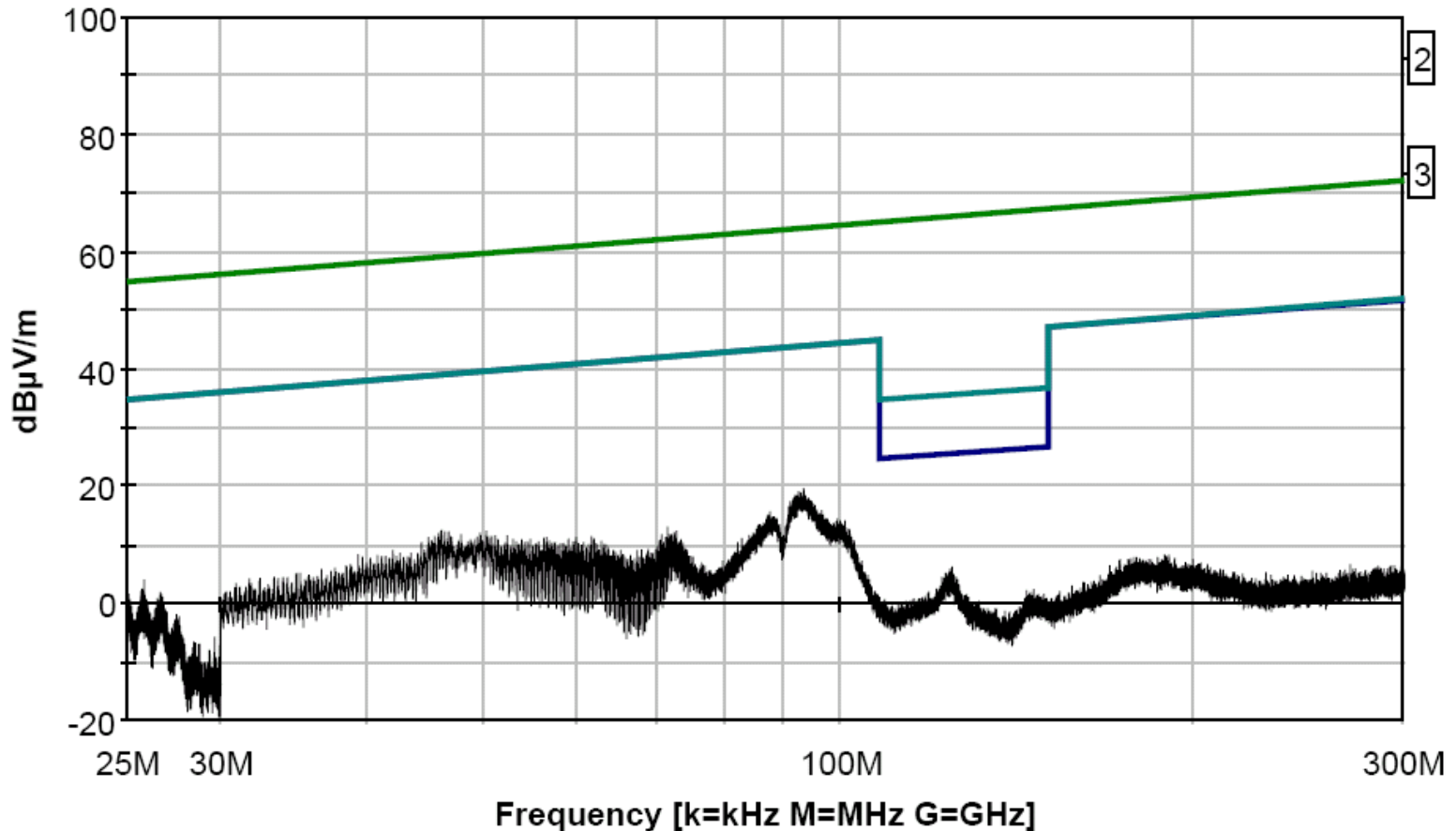
Sunspot 64 Installation

- T-6 Leading Edge



AeroLEDs Landing lights RFI

- LED landing lights emit very little RFI



Landing Light Synchronization

- Built-in pulse function with synchronization for wig-wag mode

