Whelen Nav/Strobe wingtip lens
Installation Document

Overview
The Whelen wingtip lens nav strobe lights, no matter the type, are designed to be installed into the lens area of the wingtip. The LED’s generate very little head and use very little power. Use of the wingtip nav/strobe in the lens also requires a tail mounted nav/strobe such as the Whelen OR5001V.

Installation Considerations
The primary consideration when installing these is location of the light in the lens. If you intend to install landing lights in the lens area, then the nav strobe needs to be installed as far fwd as possible, and as high as possible, to fit in the lens AND be out of the way of the landing lights if installed. If you don’t have any landing lights in there, then only being fwd is important. Here is an example of a Whelen OR65001 all LED nav strobe assembly on the right wingtip lens area of an RV-8. The wingtip is off and setting up on a table. The left side of the photo is the bottom of the wingtip, the right side of the photo is the top of the wingtip. You will notice that the nav/strobe light is oriented to the top side of the wingtip to give the landing light as much fwd and down exposure as possible. A mounting template has been provided at the end of this document for the small lens areas of the late model RV 7/8 with a landing light installed in the tip. You may have a large mounting area inside the lens. In these cases, the light only needs to be far back enough from the leading edge of the tip for the light to clear the lens. CAUTION! Do not touch the LED with either fingers or sharp objects. This could soil and/or damage the lens and affect the optical performance of the LEDs.

Installation
1. Remove the wingtip and lens.
2. Measure the height of the light assembly to get an idea of how much clearance in the lens you will need to start out with. Make a mark on the base assembly where the light is the tallest and most forward point.
3. Disassemble the light from its mounting base. The base will be used as a drilling template. Use the drilling template at the end of this document if you have an RV 7/8. Other RV models can follow these instructions.
4. Place the light base on the wingtip. Using the lens and a ruler, get a general position of where the base needs to be mounted to clear the lens. Use your base mark for the highest fwd position. This is only for general position so that you can get a small hole drilled for the wires to get to a final position.

5. Remove the lens. Take a look at the position of the base. Drill a “1/4” hole, using the base as a guide, in the area of the wire pass thru in the base. Suggest you drill a hole near the aft edge of the area. Most folks tend to underestimate how far back the base needs to be to clear the lens so its best to be safe and drill a hole near the aft side of the wire pass thru area just in case you need to move the base back some. On the RV 7/8, the base sits right up against the back wall as far aft as it will go. This wire pass thru hole will be enlarged as you get the base close to the actual position. Mark the position of the base on the wingtip by outlining it with a marker.

6. Place the light on the base and pass the wires through the hole in the wingtip. Trial fit the lens with the light assembly in there. Make any final adjustments in the base my moving it so it absolutely clears the lens. LED’s generate little heat so the light can fit right up to, but not touching, the lens. This is a trial and error activity. Lens on, lens off, move the light around so that its as far fwd as possible, and as far up near the top of the wingtip as possible if your putting a landing light in the tip too.

7. Once your happy with its position, mark the base for final position. Remove the light from the base. Use the base as a guide and drill the 3 #6 holes for mounting. Also use the base as a guide to mark the wire pass thru in the base.

8. Remove the base. Clean up the holes and cut out area.

9. Install the base using the screws and washers provided.

10. Install the light to the base.

11. Install the lens. Marvel at your workmanship!

12. Wire the light to the aircraft using proper aircraft wiring techniques. Refer to the Whelen Installation guide for your product. Check all avionics systems for interference from this installation.
Rudder Light

The rudder light is mounted directly into the rudder. 2 4-40 stainless steel screws 1.5” long are provided to help ease the pain of working in that tight rudder area. The light is marked top so make sure you orient it correctly. Simply remove the screws for the light and install with the screws provided. Easy enough.

Wiring

No matter your installation type, the light wiring should be protected by a fuse or circuit breaker. A nice article on wire size by the man himself Bob Nuckollll
http://teamaerodynamix.com/products/articles/wiresize.pdf. A 20ga wire and a 2 amp fuse will protect the wire for the nav light. And a 20ga wire with a 5 amp fuse will protect a single strobe circuit. No shielding is necessary on LED devices. If your using 2 of these nav lights on a single circuit, a 3 amp fuse will do the trick. Suggest a 10 amp fuse on the strobe circuit if your using a 3 strobe installation (wingtips and the tail). A molex connector has been provided to disconnect your lights at the wingtip for easy tip removal. A how to article from Bob below on crimping these great little pins.
http://www.aeroelectric.com/articles/matenlok/matenlok.html

All Whelen ACL(anti-collision light) LED nav/strobe assemblies follow the same wiring color legend schema: RED +12VDC ACL strobe, ORANGE +12VDC nav position, YELLOW SYNC (optional), BLACK – GROUND.

Other reverence materials

You can find a list of drawings for the various Whelen light models here.
RV 7/8 wingtip Nav/strobe
Right tip shown. Flip over for left wingtip

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