

**FRESH AERO FlightLights
Goose Light
LED Cockpit/Cabin Light System**



Manual

Fresh Aero FlightLights Goose Light LED Cockpit/Cabin Lighting System

Thank you for purchasing the Fresh Aero Goose Light. We're confident you'll be pleased with this innovative LED cabin/cockpit lighting solution for aircraft interiors.

The Fresh Aero Goose light utilizes four high intensity light emitting diodes to provide superior nighttime cabin and panel lighting and can be purchased in several configurations to completely satisfy your interior lighting needs.

Innovative Features Include:

- State of the art high intensity LED solid-state lighting in red, green, blue or white
- Provides illumination to entire instrument panel, charts or anywhere you need illumination with a bright, clean, wide, even light. No halos, gaps or weak spots. Makes reading instruments, maps and other printed material a joy!
- Very long life cycle. These LEDs, when used correctly, have an approximate life span of over 60,000 hours.
- Operates on a 12-14 or 24-28 volt aircraft bus (depending on the configuration) or from a portable power pack. Very low power consumption – 74 milliamps (.074 amps) for the 12/14 volt model and 83 milliamps (.083 amps) for the 24/28 volt model.
- Lighting heads are fabricated from aluminum with a black gloss or satin stainless steel coating. Segmented Acetal copolymer goosenecks stay where you position them.
- Goosenecks are available in several lengths to accommodate your specific needs
- Many mounting options available including panel, surface and tube mounting solutions
- MIL-W-22759/16 aircraft wire leads are 18 inches long with in-line fuse option
- Light weight – about 2 ounces (configured with 5 inch neck)
- All components have at least a UL94 HB flame retardant rating
- Lighting units can be positioned to direct light anywhere in the cabin and baggage area
- Vibration proof design. Aircraft vibration will not be a factor.

The Fresh Aero Goose Light offers high brightness panel and cabin lighting solutions at down to earth prices. With proper use, the Goose Light will provide many years of reliable, economical and safe service.

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Study and save this manual



Read this entire manual before using your Fresh Aero Goose Light. Make sure you understand the instructions and safety precautions in this manual. Keep this manual and your invoice in a safe place for future reference.

Fresh Aero Goose Light General Safety Warnings and Precautions

Warning: always adhere to the following safety precautions when using this product.

- Do not alter or modify the Goose Light unit in any way.
- Do not tamper with internal components. Light heads have specific internal components to match the LED light configuration. There are no user replacement parts except head replacements.
- The Goose Light is designed for 12/14 and 24/28 volt DC electrical systems. Do not use these lights with voltage systems higher than their labeled rating. Higher than rated voltage will damage LEDs or drastically shorten LED life span and void warranty.
- Handle unit carefully. Do not drop.
- Make certain that mounting location structure will properly support the Goose Light.
- Make certain that lead wire polarity is correct. Red wire with red (+) flag is positive and white wire (-) flag is negative (ground). Do not reverse polarity when connecting to the aircraft electrical system. Incorrect polarity will destroy or drastically shorten LED life span and void warranty.
- Do not kink or crush wire leads when installing.
- Always fuse positive lead with a one ampere fuse.
- Never use the Goose Light unit or any other single cockpit/cabin light as the only lighting source when flying at night. As with other aircraft systems, always have redundant lighting available for safe night operations.

Warning: The warnings, precautions and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors that cannot be built into the Goose light and must be supplied by the person or persons using this product.

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Important Notice: If you have questions regarding the installation or operation of the Fresh Aero Goose Light, or just need another manual, please call or write Fresh Aero Aviation at the at the contact numbers or e-mail address on the last page of this Guide. Manuals are also available on our web site in PDF format at www.freshaero.com.

Other Legal Notices

Fresh Aero makes no representations or warranties regarding any damages, injuries or benefit expected by using this unit lawfully, or any request from a third person, which are caused by the inappropriate use of this product.

Disclaimer of Warranty

Fresh Aero makes no representations of warranties, either expressed or implied, by or concerning any content of these written materials and in no event shall be liable for any implied warranty for any consequential, incidental or indirect damages (including but not limited to damages for loss of business profits or business interruption) arising from the use or inability to use these written materials or equipment. No liability is assumed with respect to the use of the information contained in these written materials, or for damages resulting from the use of the information contained therein.

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3 year Limited Warranty

Fresh Aero makes every effort to provide high quality and durable products to the aviation community and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 3 years from the date of purchase. This warranty does not apply to damage due directly or indirectly to misuse, abuse, negligence or accidents; repairs or alterations outside our facilities; or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation defect or problem must be included with the product. If inspection verifies the defect, we will either repair or replace the product at our discretion or may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return the repaired or replaced product at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then the purchaser must bear the cost of returning the product.

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Installing the Goose Light

Read and understand all the proceeding safety precautions and warnings before installing the Goose Light.



FAA Approval Information (USA Installations): The Flight Lights Goose Light System is designed and manufactured for homebuilt (experimental) aircraft. If you install this product on a certified aircraft, you will need at least a FAA field approval to be completely legal and airworthy. See last page of this manual.

Use FAA approved methods and procedures (USA) when installing connecting the Goose Light. Refer to FAA EA-AC 43.13-1A&2A "Acceptable Methods, Techniques and Practices" for correct procedures.

1. Preparing for Installation

- 1.1 Locate aircraft on a level surface and chock aircraft tires to prevent movement.
- 1.2 Determine the best mounting location by moving the Goose Light to several different locations in the cockpit and/or cabin. Consider connecting the light to a 12/14 or 24/28 volt DC power source (depending on the rating) and experimenting with different locations at night for the best position.

Warning: Remember to connect with the proper polarity -- red to positive, white to negative.

- 1.3 When determining the best location, make sure the structure or panel chosen will properly support the Goose Light. Also provide ample clearance from other objects including the pilot and passengers. Consider the ease (or difficulty) of routing the wires from the unit to the aircraft bus and ground.

2. Mounting Goose Light on panels with access behind panel for locking nut and wiring

- 2.1 You will need at least ½ inch clearance behind the mounting panel for the locking nut and wiring. If this clearance is not available, consider surface mounting the Goose Light -- refer to instructions in next section.
- 2.2 When best location is found, mark and remove panel. Verify that no structure, wires, cables or other components behind panel will interfere mounting and wiring. Drill 3/8 inch hole in panel. Wear safety glasses or goggles and use proper drill for type of material being drilled.

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Installing the Goose Light - continued

2.3 Remove burrs from hole and fish wire leads and threaded fitting on the Goose Light through hole. Place one of the supplied washers over the threads and secure fitting with supplied nylon nut (washers and nuts are not supplied if surface mounts are ordered with lights.). **Caution:** Do not over-tighten. Hand tighten and just slightly "snug" nut with wrench.

Note: If panel flexes when adjusting the gooseneck, use other supplied washer on exterior side of panel to reinforce the panel.

2.4 Connect and route wires using FAA approved procedures.

Warning: Make sure wires do not kink or abrade on metal structure.

2.5 Connect the white wire to a reliable aircraft ground point (- side) and connect the red (+) flagged wire to a properly rated switch connected to the aircraft bus (+ side). Protect the Goose Light with a one ampere fuse in the switch side of the circuit.

3. Surface Mounting on Solid Surfaces or where Clearance is Limited Behind Panel

Note: Use an optional surface mounting base (available on the Fresh Aero web site) for the following procedures.

3.1 If you are routing the Goose Light power leads behind panel, drill a clearance hole at the desired location for the power leads. Wear safety glasses or goggles and use proper drill For type of material being drilled. Remove burrs from hole.

3.2 Spot location of mounting base holes by holding the mounting base at the desired location (align center hole in mounting base with hole drilled in the previous procedure) and trace holes on panel with a pencil, scribe or narrow felt tip marker.

3.3 Set mounting base aside and drill holes using above guidelines. Mounting method will determine drill hole size.

3.4 Push the Goose Light wire leads through the mounting base center hole and tread fitting into mounting base. Turn until hex is seated on the base. **Caution:** Do not over tighten hex fitting. Hand tighten and just slightly "snug" hex with wrench.

Note: If you are routing the power leads on the surface of the panel, simply fish the leads through the tunnel in the mounting base.

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Installing the Goose Light - continued

- 3.5 Mount the flange using approved mounting procedures. 18-8 SS 6-32 screws and aluminum doubler plates are included with mounts. Protect power leads where they pass through panel. Make sure wiring or other components behind mounting location will not interfere with mounting screws.
- 3.6 Connect and route wires. Connect the white wire to a reliable aircraft ground point (- side) and the red wire with the (+) flag to a properly rated switch connected to the aircraft bus (+ side). Protect the Goose Light with a one ampere fuse in the switch side of the circuit.

Warning: If goose light does not light when power is applied, disconnect power immediately and check for proper polarity. Polarity must be correct to avoid LED damage and protect your warranty.

Note: The Goose Light is configured for optimum operation with 13.8 or 27.6 volts DC applied (depending on the light rating). These are standard bus system voltages with the alternator charging the system. If the bus voltage is slightly higher, this will not damage the goose Light but a slightly shorter LED life cycle may be experienced. Also, if the bus voltage is slightly lower, there is no harm done with the exception of a slightly lower brightness level. This is very minor. Expect this condition with using the Goose Light with the engine not running.

Note: The Goose Light can also be mounted on round or square tubing using the optional tubing “U” mount available on the Fresh Aero web site.

A Few Words on FAA Approval (USA Installations)

We consider the Fresh Aero Goose Light system to be an innovative and safe cockpit and cabin lighting solution for home built (experimental) aircraft.

This same lighting potential exists for certified aircraft but even minor modifications may need some type of FAA approval to be legally used in certified aircraft.

If you install the Goose Light system in your certified aircraft, you will need at least an FAA field approval (337 form) to be completely legal and airworthy. Please talk to your local FAA Flight Standards Office for more information.

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Goose Light Technical Data Sheet

This data can be used to facilitate the FAA “337” form approval process for the Fresh Aero Goose Light.

FlightLights Goose Light Specifications:

Current draw at 14 VDC

Red LED head - 82 milliamperes (.082 amps)

Blue LED - 70 milliamperes (.070 amps)

Green LED - 74 milliamperes (.074 amps)

White LED - 69 milliamperes (.069 amps)

We also offer the Goose Light in a 24/28 VDC version. With a source voltage of 27.6 VDC, current flow is listed below.

Red LED head - 77 milliamperes (.077 amps)

Blue LED - 72 milliamperes (.072 amps)

Green LED - 72 milliamperes (.072 amps)

White LED - 73 milliamperes (.073 amps)

Flammability rating:

All components meet or exceed FAA Sec. 23.853

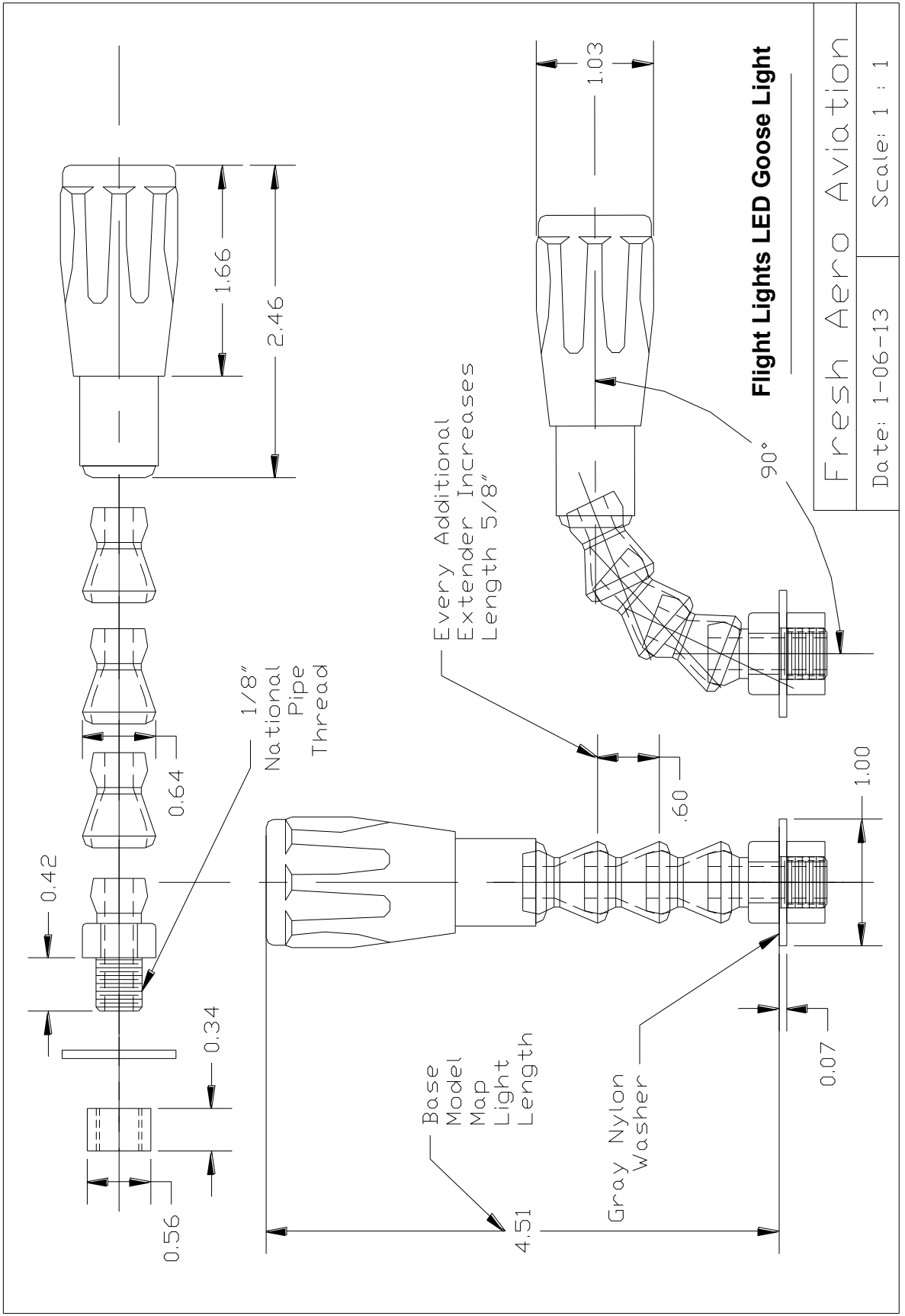
All components: non-flammable or self extinguishing.

All wiring is self extinguishing Mil-W22759/16 and meets FAA Sec. 23.1359.

Function and installation:

The Goose Light meets all parts of FAA Sec. 1301

Total weight: 2 oz. nominal (configured 5 inch gooseneck)



Fresh Aero Aviation

Date: 1-06-13

Scale: 1 : 1