

**Installation Instructions  
for  
Light Emitting Diode (LED)  
Aircraft Light System  
Installed in Accordance With  
STC SA02212AK  
For  
VARIOUS MODEL AIRCRAFT**

**Doc. No.:** LED 03-20  
**Rev:** C  
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### Log of Revisions

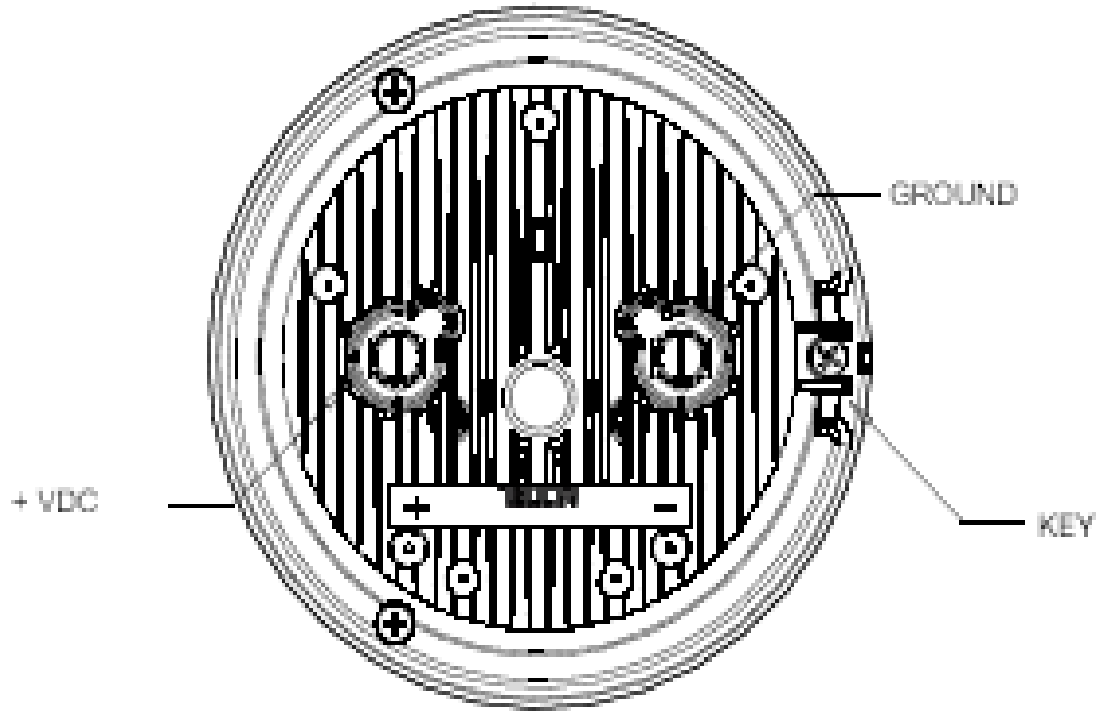
<b>Rev.</b>	<b>Description</b>	<b>Pages</b>	<b>Approved</b>	<b>Date</b>
IR	Initial release.	-		03/18/2010
A	Replace STC Number	1		06/18/2010
B	Revise weight	6		12/07/2010
C	Add PAR46 lamps, revise check out procedure, change reference from ballast to lamp.	5,9,6,11		01/12/2011

**IMPORTANT:**  
**PLEASE READ THROUGH ALL INSTRUCTION STEPS BEFORE**  
**PERFORMING LIGHT SYSTEM INSTALLATION.**

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1.0 Parts List:



LED LANDING OR TAXI LAMP

Item No.1

Packing List

Qty	Item No.	PART NUMBER	Title	Notes
1	1	01-0771424-10	PAR 36 LANDING LIGHT 14V	1
1	1	01-0771424-15	PAR 36 TAXI LIGHT 14V	1
1	1	01-0771424-20	PAR 36 LANDING LIGHT 28V	2
1	1	01-0771424-25	PAR 36 TAXI LIGHT 28V	2
1	1	01-0790623-10	PAR 46 LANDING LIGHT 14V MODEL PLED461L	1
1	1	01-0790623-20	PAR 46 LANDING LIGHT 28V MODEL PLED462L	2

1 – Used on 14 Volt systems only.

2 – Used on 28 Volt systems only.

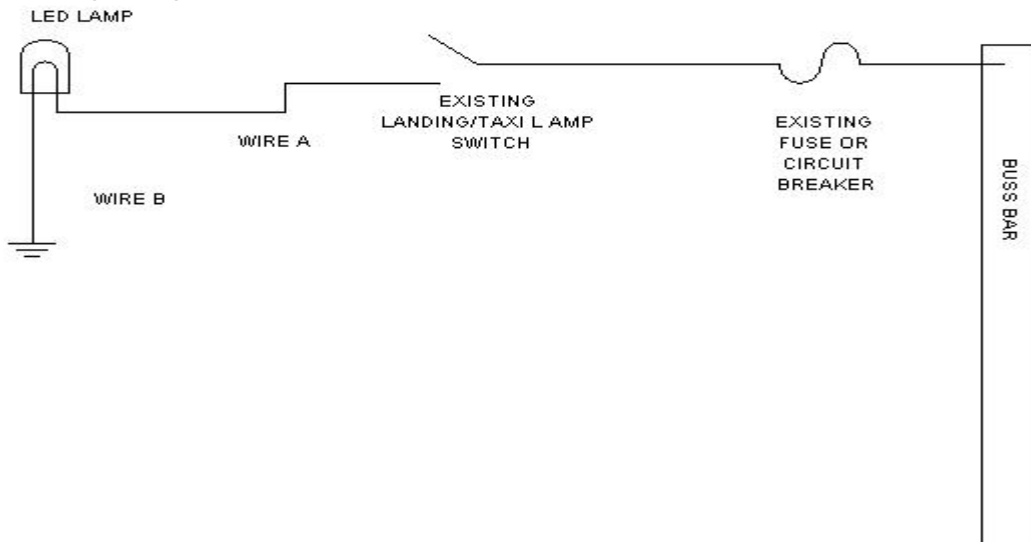
## 2.0 Component Locations

Refer to the aircraft manufacturer's service manual and or illustrated parts catalog: Locate the landing and or taxi light system installed in your aircraft. This will specify where the components are located when installed.

## 3.0 Weight and Balance

Component	Weight	Longitudinal Location	Lateral Location
Whelen ® PAR36 LAMP (Rev. -)	.6 LBS		
Whelen ® PAR36 LAMP (Rev. A)	.52 LBS		
Whelen ® PAR46 LAMP (Rev. -)	1.0 LBS		
Original LAMP			

## 4.0 Wiring Diagram



Wire	Application	Manufacturers Wire Code
Wire A	Landing or Taxi Lamp positive wire	See airframe manufacturers wiring diagram
Wire B	Landing or Taxi Lamp ground wire	See airframe manufacturers wiring diagram

## 5.0 Abbreviations, Cautions, Warnings

### Abbreviations:

LED                      Light Emitting Diode

### Cautions and Warnings:

1. Lamp contains no user repairable items.

**WARNING:**

*If the aircraft being modified incorporates a remote sensor (flux gate) compass: DO NOT mount the LED light within 24 inches of the remote compass. Additionally, after installation of the LED lighting system, a compass swing MUST be performed with the landing/taxi lights ON & OFF and the position error card must be annotated accordingly.*

**WARNING:**

*Adequate clearance between the LED and surrounding structure must be maintained. DO NOT mount the LED light with less than 1/8" clearance from back of lamp to fixed structure or 1/4" clearance to movable structure. DO NOT mount the LED light with less than 4" clearance to exhaust system components.*

**WARNING:**

*On all aircraft that are being modified it is IMPORTANT to check the size of the power supply wire to the landing lights. Using the chart below, confirm that wire of sufficient wire gauge is installed for the wire length.*

12 Volt Wire Gauge	Maximum Wire Length
16 GA	25 ft.
18 GA	20 ft.
20 GA	12 ft.
24 Volt Wire Gauge	Maximum Wire Length
16 GA	100 ft.
18 GA	80 ft.
20 GA	50 ft.

*If the aircraft power supply wire is undersize it MUST be removed and a new wire installed in its place. Reference: AC43.13-1B Paragraph 11-66(d) and Figure 11-2.*

## 6.0 Removal of Original Lamps and Installation of LED Lamps

### Removal:

1. Prepare the aircraft for maintenance.
  - (A) Make sure all switches are in the OFF/NORMAL position.
  - (B) Disconnect the aircraft battery(s).
  - (C) Disconnect external power from the aircraft.
  - (D) Attach maintenance warning tags to the battery(s) and external power receptacle that have **“DO NOT CONNECT ELECTRICAL POWER-MAINTENANCE IN PROGRESS”** written on them.
  - (E) Pull landing/taxi light circuit breaker(s).
2. Reference airframe manufacturers current maintenance manual: Remove any light cover to gain access to lamp assembly(s) and bracket(s).
3. Disconnect connection to positive aircraft power.
4. Disconnect ground from aircraft power.
5. Remove existing lamp(s) from brackets, mark and retain hardware.
6. Record weight of removed lamp(s).

### Installation:

Reference airframe manufacturer’s current maintenance manual.

1. Install LED lamp(s) in brackets using retained hardware.
2. Connect positive wire to + terminal on lamp.
3. Connect negative wire to – terminal on lamp.
4. Reinstall any light cover(s) removed to gain access to lamp assembly(ies) and bracket(s).
5. Prepare aircraft for power up.
  - (A) Make sure all switches are in the OFF/NORMAL position.
  - (B) Connect the aircraft battery(s).
  - (C) Remove maintenance warning tags to the battery(s) and external power receptacle that have **“DO NOT CONNECT**

**ELECTRICAL POWER-MAINTENANCE IN  
PROGRESS**” written on them.

- (D) Engage landing light circuit breaker.
  - (E) Perform an EMI and function check the system in accordance with section 7.0.
7. Revise aircraft weight and balance and equipment list.
  8. Prepare and File FAA form 337.
  9. Record maintenance performed in aircraft records.
  10. Perform an operational check of the landing/taxi light(s) in accordance with 14CFR 91.407 (b) and/or (c) to determine that the installed landing/taxi light(s) provide enough light for night operations. Record this finding in the aircraft records.

## 7.0 EMI and Function Check :

1. Apply power to the LED lighting system.
2. **Check and record** aircraft bus voltage.
3. Set the installed or handheld VHF communication radio to sweep between 117.00 MHz and 137.00 MHz.
4. Adjust the VHF radio to the squelch activation threshold.
5. Place the antenna of the handheld VHF radio (if used) in close proximity to the LED lamp.
6. **Record** radio frequencies where the VHF radio squelch activates.
7. Shut off the handheld or installed VHF radio.
8. Turn the VOR receiver(s), if so equipped, "ON."
9. Cycle through the VOR frequencies, 108.00 – 118.00 MHz, and **record** any channels with unusual background noise.
10. Turn VOR receiver(s) "OFF."
11. Turn ADF receiver(s), if so equipped, "ON."
12. Cycle through the ADF frequencies and **record** any frequencies with unusual background noise.
13. Turn ADF receiver(s) "OFF."
14. Operate all other aircraft systems, if installed, in all modes and verify that there are no failures to navigational and communications equipment during ground and flight operations.
15. Using the previously noted frequencies, determine if the newly installed LED lighting system is the source of the EMI. This can be accomplished by switching the LED lighting system "OFF." If the noise remains on the previous recorded radio frequencies, the EMI can be attributed to some other source. **Record** the results of this final procedure.

### WARNING

If the aircraft to be altered has a remote mounted compass (flux gate) **DO NOT MOUNT** the LED light within **24"** of the remote mounted compass. In addition to the minimum spacing it will be necessary to conduct a compass swing of the aircraft with the LED landing light ON and OFF to determine error in the remote compass measurements.

## 8.0 Trouble-Shooting Procedure:

If the system fails to illuminate when the landing light switch is activated, you will need to trouble-shoot the system. Remember that loose connections and corroded connections may give full voltage indications when measured without a load.

1. In case of failure to illuminate: The input voltage to the lamp is 14 or 28 volt according to the dash number in the part number. Voltage is specified on the part label at the + terminal. Troubleshoot as follows:
  - a. Check for bus voltage at power input wire to the lamp.  
Reestablish power if inadequate power is found.
  - b. Check for proper lamp part number per the aircraft manufacturer's system voltage.
  - c. Check for excessive resistance at lamp ground and repair if necessary.
  - d. Disconnect lamp, bench check lamp using verified power source of proper output. If lamp does not function, replace lamp.

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