

Installation Instructions (factory light replacement)

The following instructions explain the removal and replacement of the Cessna spotlight/maplight assemblies with the LED Maplight 4/Maplight 6 series light assemblies. See page 4 of these instructions for installation of an LED Maplight 4/Maplight 6 assembly in an eligible aircraft without a factory spotlight/maplight installed.

Caution: Unless otherwise noted, ensure the electrical systems associated with the removal and installation of the light assemblies listed in these instructions is de-energized.

Step 1: Prior to the removal of the factory spotlight or maplight assembly, the installer must first determine the aircraft's electrical system voltage rating (either 12 or 24 volts dc). The only difference in the comparable models of the factory light assemblies is the voltage rating of the bulbs. Also in the replacement of the single color light assemblies the amount of illumination required in the aircraft can be increased or decreased not only with the rheostat (dimmer control), but also by choosing a 4-LED (Maplight 4 series) or a 6-LED (Maplight 6 series) assembly. Refer to the replacement chart in these instructions for the proper LED Maplight series assembly p/n cross reference to the factory light assembly p/n and aircraft system voltage.

Step 2: Remove the door post shield the factory light assembly is mounted in. Refer to the proper aircraft maintenance and or parts manual for this step if necessary. If the condition of the door post shield is questionable, replacement of the door post shield may be required. The door post shields in some Cessna models are constructed of aluminum and may be 2 piece assemblies. The factory light assembly should be mounted in the door post shield on the upper forward facing flat area adjacent to the vent tube. See figure 3 for approximate mounting area. If the factory light assembly was not mounted in this area, the mounting location of the LED Maplight assemblies must be mounted in the proper area as illustrated in figure 3.

Step 3A: For replacement of the single bulb spotlight assemblies, de-solder the positive light assembly wire **at the switch** that controls power to the factory light (should be mounted in the lower part of the door post shield, see figure 3). Remove the factory light assembly from the door post shield. Also remove and discard the light assembly ground wire (to be replaced with the new ground wire assembly, figure 3).

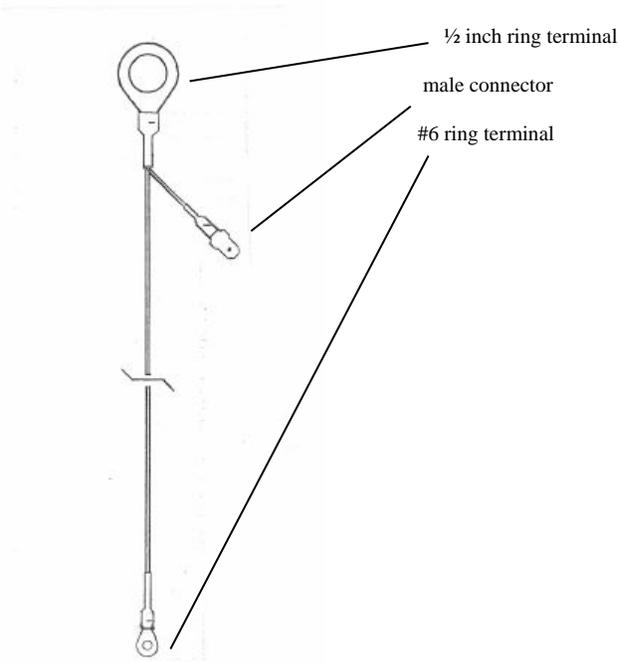
Step 3B: For the replacement of the 2 bulb light assemblies, first determine which positive wire is energized when the light switch is in the white position, (the wire energizing the white LED's in the Maplight 6 series will connect to this switch terminal). The other positive wire going from the switch to the factory light assembly should be energized when the switch is in the red position (the wire energizing the colored LED's in the Maplight 6 assemblies will connect to this terminal). Use a volt meter or a test light with the proper voltage rating to determine the proper switch terminals. When testing for voltage present at the switch terminals, the circuits feeding the switch must be energized. Also the rheostats (dimmer controls) must be turned fully clockwise (bright position) to get a proper voltage reading. Take care not to cause a short when accomplishing this step. Record the switch terminal positions in relation to the color of light emitted when the switch is in each position. De-solder the positive wires **at the switch**. Remove the factory light assembly from the door post shield. Also remove the factory ground wire (to be replaced with the new ground wire assembly).

Note: An alternative method of disconnecting the positive wire (s) to the factory light assembly would be to cut the positive wire(s) approximately 4 inches from the switch and use crimp-on blade or push connectors approved for use in the aircraft. See AC43.13 1B-2A for information on approved connectors and wire splicing methods. The connections made to the new positive wire(s) coming from the LED Maplight 4/Maplight 6 must be insulated to prevent contact of the connections to ground (airframe). The existing light assembly positive wire(s) may already be connected in this manner.

Step 4: Prior to drilling a hole in the door post shield to mount either series of the LED Maplights, ensure that there will be adequate clearance behind the door post shield for the LED Maplight mount and associated wiring. Also ensure the LED Maplight assembly will not interfere with the operation of the vent tube or stall horn (if applicable in that model of aircraft). Drill a 15/32 inch hole in the desired location for the LED Maplight assembly. The older models of the factory spotlights were secured to the door post shield with qty 2 #6 screws. A 15/32 inch hole may be drilled in the door post shield halfway between the two existing holes. Newer models of the factory maplights/spotlights utilized one hole for mounting the light assembly to the doorpost. This hole may be enlarged to 15/32 inch provided the location of the replacement LED Maplight assembly will not interfere with the operation of any system on the aircraft.

Step 5: Install the LED Maplight assembly (either series) in the 15/32 inch hole drilled in the door post shield (the main body of either series of the LED Maplight assembly should be on the exterior of the door post shield). See figure 2 for assembly order of the 1.125x.480x.063 aluminum washers, ½ inch ring terminal (part of the ground wire assembly), internal tooth lock washer and 15/32-32 nut. Tighten nut securely (do not over tighten causing the threads to strip on the Maplight post).

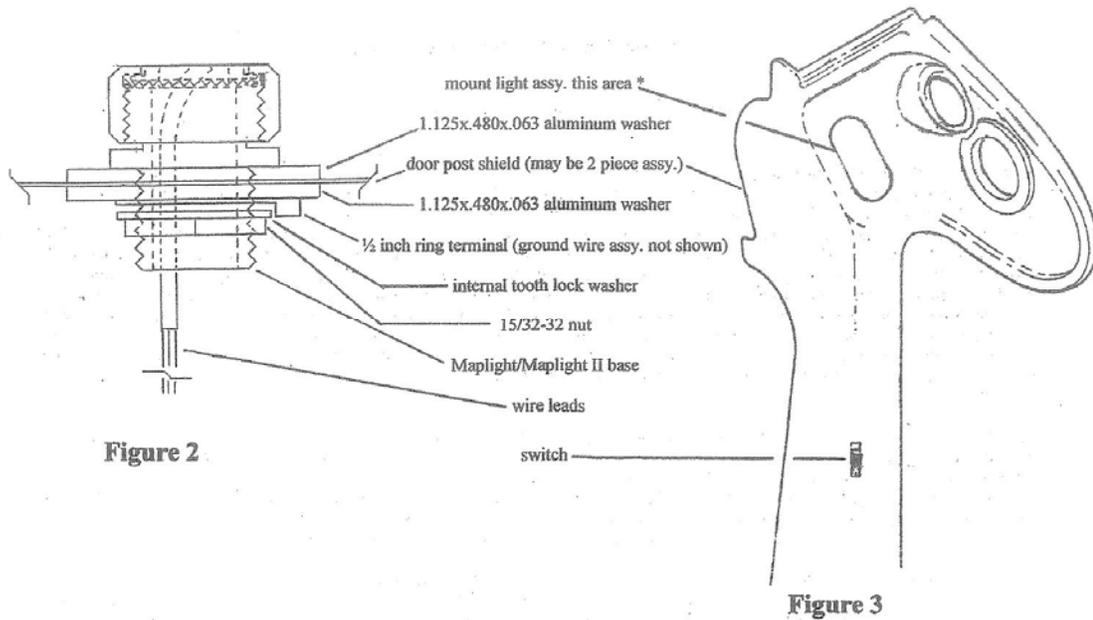
Step 6: Connect the LED Maplight 4/Maplight 6 positive wire(s) to the switch terminals via soldering, or by using approved crimp style connectors and attaching to existing positive wire(s) from the light switch. See notes in step 3 concerning crimp connectors. See LED Maplight 4/Maplight 6 replacement p/n chart for identification of positive wire insulation color to LED color. Connect the new ground wire assy. to the airframe via the #6 ring terminal (see figure 1 for identification of #6 ring terminal) and the screw that was removed in step 3A or 3B connecting the factory ground wire to the airframe. Connect the remaining male/female push connectors together connecting the ground wire assembly to the short black ground wire from the LED Maplight 4/Maplight 6 assy. This connection does not have to be insulated as it is the same as the aircraft ground. Turn on the LED Maplight 4/Maplight 6 assembly and operate it as you would the factory light assembly to ensure that the proper color LED's illuminate when the switch is turned on (or for each color in the dual color LED Maplight series). The new LED Maplight series is designed to work with any rheostat (dimmer control). Verify that there is a minimum of .500 inch clearance between the back of the factory switch and the fuel line, and that nothing is chafing the fuel line (see AD2001-23-03 if applicable). Replace the door post shield ensuring all wires are secure and not pinched between the door post cover or retaining screws. If the colored light (other than white) of the LED Maplight 6 assembly is **other** than red, apply the light color label coinciding with the color of the LED's over the existing "red" label on the door post shield adjacent to the switch.



Installation kit parts list

p/n	qty
Maplight 4 or Maplight 6 assy. (includes 15/32 internal tooth lockwasher and 15/32-32 nut)	1
1.125x.480x.063 aluminum washer	2
ground wire assy.	1
switch label	1
installation instructions	1
FAA form 8130-3	AR

Fig. 1 (ground wire assy.)



*verify mounting location using applicable factory parts and or service manuals for the model and serial number of the aircraft that the LED Maplight 4/Maplight 6 assy. is to be installed in

LED Maplight 4/Maplight 6 replacement p/n chart

Factory light assy. p/n	Aircraft electrical system voltage (volts dc)	LED MAP4/MAP6 series p/n	Positive wire insulation color (negative wire all series = black)
0713017-1 0713017-21 0713017-22 1470089-10 1470089-10-532 (12 & 24 volt series) single color light assy. (clear bulbs only)	12 volts	MAP4-R12 (4-red LED's) MAP4-W12 (4-white LED's) MAP4-B12 (4-blue LED's) MAP4-G12 (4-green LED's) MAP6-R12 (6-red LED's) MAP6-W12 (6-white LED's) MAP6-B12 (6-blue LED's) MAP6-G12 (6-green LED's)	MAP4-R12 / MAP6-R12 (red wire) MAP4-W12/ MAP6-W12 (white wire) MAP4-B12/ MAP6-B12 (blue wire) MAP4-G12/ MAP6-G12 (green wire)
	24 volts	MAP4-R24 (4-red LED's) MAP4-W24 (4-white LED's) MAP4-B24 (4-blue LED's) MAP4-G24 (4-green LED's) MAP6-R24 (6-red LED's) MAP6-W24 (6-white LED's) MAP6-B24 (6-blue LED's) MAP6-G24 (6-green LED's)	MAP4-R24/MAP6-R24 (orange wire) MAP4-W24/MAP6-W24 (yellow wire) MAP4-B24/MAP6-B24 (violet wire) MAP4-G24/MAP6-G24 (brown wire)
1470089-14 1470089-15 1470089-15-279 (12 & 24 volt series) dual color light assy. (3 clear bulbs, 3 color bulbs)	12 volts	MAP6-W/R12 (3-white/3-red LED's) MAP6-W/B12 (3-white/3-blue LED's) MAP6-W/G12 (3-white/3-green LED's)	MAP6-W/R12 (red wire = red LED's) MAP6-W/B12 (blue wire = blue LED's) MAP6-W/G12 (green wire = green LED's) white wire = white LED's (12 v models)
	24 volts	MAP6-W/R24 (3-white/3-red LED's) MAP6-W/B24 (3-white/3-blue LED's) MAP6-W/G24 (3-white/3-green LED's)	MAP6-W/R24 (orange wire = red LED's) MAP6-W/B24 (violet wire = blue LED's) MAP6-W/G24 (brown wire = green LED's) yellow wire = white LED's (24 v models)

Installation Instructions (new install)

Caution: Ensure aircraft electrical system is de-energized.

Step 1: The LED Maplight 4/ Maplight 6 series assembly is to be installed in the same basic manner as the Cessna light assemblies. The installer must first determine that the aircraft that the LED Maplight is to be installed in would be eligible for installation of a Cessna factory spotlight/maplight assembly. This would be accomplished by reference to the appropriate parts manual/fiche, maintenance manual, and wiring diagram (part of the maintenance manual) for the model and serial number of the aircraft the light is to be installed into. Once the determination is made as to the part number of the factory light that is eligible to be installed in the aircraft, the factory part number can be cross referenced to the proper LED Maplight 4/Maplight 6 part number via the **LED Maplight 4/Maplight 6 replacement p/n chart** on page 3 of these instructions. Keep in mind you must also know the voltage of the aircrafts electrical system, as this information will also help in determining the proper LED Maplight part number. Also be aware that you can substitute a LED Maplight series with white, red, green or blue LED's for the single bulb factory light assembly. This would depend on what type of lighting you want to provide in the aircraft, i.e. red, green or blue for less degradation of a person's night vision, or white for general interior lighting. The same is true of the dual colored LED Maplight 6 series as far as the colored LED, s go. The LED Maplight 6 series also have 3 white LED's in addition to 3 colored LED's, each color being energized independently of each other.

Step 2: Once the proper part number of the LED Maplight 4/Maplight 6 has been determined, you must also choose the proper switch for the aircraft. The switch part numbers are listed in the applicable aircraft parts manual. There is a difference in the switches as the single colored light assemblies use a single pole, single throw switch. The dual colored light assemblies use a single pole double throw switch with a center "off" position. The factory switch assemblies must be used unless an approved alternate switch is obtained. The switch must be located and installed per the applicable parts and maintenance manuals for the aircraft (see figure 3 also). Also ensure that there is adequate clearance between the back of the switch and any wiring or fuel lines located behind the doorpost cover. See AD 2001-23-03 for more information.

Step 3: Wiring of the LED Maplight 4/Maplight 6 assemblies as well as the switch shall be accomplished in accordance with the applicable aircraft maintenance manual and wiring diagram. Note that the power supplying the colored LED's is provided via the panel lighting dimmer. Therefore when the switch for the dual colored light assembly is in the colored position (opposite the white light position), the light will be dimmable as will the panel lights. Verify this by utilizing the applicable wiring diagram. The wire and wiring connections used, as well as the dimmer assembly must be approved for use in the aircraft. If a dimmer is not installed, do so in accordance with the applicable factory parts and service manuals. Also insure the proper overcurrent protection is utilized per the applicable parts manual and wiring diagram. The #6 terminal on the ground wire assembly is to be fastened to the airframe via drilling and tapping a hole in the doorpost to accommodate a #6 screw. See the applicable parts manual for the location of the hole and description and part number of the screw.

Step 4: After installation of the light, switch and associated wiring, test the light for proper operation. Label the switch accordingly to indicate the color of light emitted and whether the switch is in the "off" position. A self-adhesive label is included with the LED Maplight 4/Maplight 6 installation kit.

For All Installations

Note: The installation of this LED Maplight 4/Maplight 6 must be entered into the maintenance logbook. There is no appreciable change in the aircrafts weight and balance with this installation. Also the p/n of the LED Maplight 4/Maplight 6 should be entered on the appropriate equipment list for the aircraft.

If any problems or issues arise with the installation or use of the LED Maplight 4/Maplight 6 assemblies, please contact Machine Inc. at 781-297-3700, or e-mail us at www.OPLITE.com via the "contact us" window on the website main page.

Rev	Description of change	Date
0	Original issue	1-10-2006
1	added ground wire assy. and instructions	1-27-2010
2	added factory light assy. p/n's 0713017-1, 1470089-10-532, and 1470089-15-279	11-9-2010
3	added number of LED's of each color in assembly-replacement p/n chart	1-26-2011
4	added page 4 for new install	2-24-2011
5	change of Company Ownership & website	9-15-2014
6	Changed part numbers from Maplight/Maplight II to Maplight 4/Maplight 6	3-05-2015