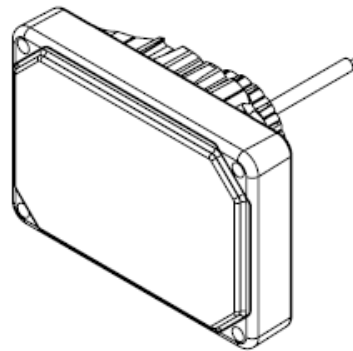




Instructions for Continued Airworthiness (ICA)

LANDING AND TAXI LIGHTS INSTALLED ON AIRCRAFT LISTED IN APPROVED MODEL LIST (AML) SA02386AK



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Approval	Name	Intent	
Author	Mark McCormack	Instructions for Continued Airworthiness for Part 23 Landing and Taxi Lights.	
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Quality	Ryan Edmark		
Date:	24 September 2021		
Status: Released	Typed signatures indicate approval. Handwritten, or electronic signature approval of this document is on file at AeroLEDs, Boise, Idaho.	Document Number 0003-0005	Revision A



REVISION RECORD

Rev	Description	Date	Author
A	Addition of SunBeam Light	9/24/21	M. McCormack
IR	Initial Revision	1/28/2021	M. McCormack



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1 System Description

SunSpot™ 36, 46, and SunBeam™ Landing and Taxi lights are designed as LED drop-in replacements for existing aircraft exterior lighting configurations. The AeroLEDs SunSpot and SunBeam lights are designed to provide a similar beam pattern at a higher intensity with full-scale color rendering as compared to legacy incandescent lights. SunSpot and SunBeam lights are operable in a single mode on/off configuration as well as a dual mode Pulse/Wig-Wag configuration.

Single mode SunSpot 36 and 46 lights are equipped with two terminals. When aircraft power and ground is applied to these terminals the light turns on. When power is removed, the light turns off. Lights operate in a similar manner to any two terminal incandescent bulbs.

Dual mode SunSpot 36 and 46 lights are equipped with two screw terminals plus a three-wire pigtail. When aircraft power and ground are applied to the terminals, and ground or no connection is applied to the three pigtail wires, the light will illuminate. When aircraft power is removed from the terminals in this configuration the light will not illuminate. When aircraft power and ground are applied to the terminals and the yellow pigtail wire, the light will pulse on and off at a 1Hz rate. Refer to the general installation diagrams in figures 7-1 through 7-4 and note that the dual mode lights can operate in Wig-Wag mode by connecting the blue and green master/slave wires from the pigtail of one light to the other while operating the lights in the pulse mode described above.

The SunBeam light operates in an identical manner as the SunSpot lights. Other than the physical shape of the lights the only difference is that the SunBeam does not have the two brass screw terminals like the SunSpot lights have. Instead, the SunBeam has a five-wire pigtail which includes a black and a red wire in addition to the yellow, blue, and green wires identical in the SunSpots. The black wire is ground, and the red is power.

2 Applicability

These Instructions for Continued Airworthiness are applicable to all SunSpot 36 and 46 lights, and the SunBeam light in AeroLEDs Master Drawing List (MDL), document 0003-0001 as listed on AML SA02386AK.

3 ICA Availability and Location

The latest FAA approved revision to this ICA is available on the AeroLEDs website located at www.aeroleds.com. Changes to the ICA, once approved by the FAA, will be communicated via email, telephone, or US Post to every registered owner and dealer/distributor of AeroLEDs lights. The ICA and its location is referenced in the installation guides for all SunSpot 36, SunSpot 46, and SunBeam lights.



4 Airworthiness Limitations

The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

There are no additional airworthiness limitations associated with this equipment and/or installation.

5 Periodic Inspections

Interval	Inspection	Remedy	Notes
Pre-Flight	<ul style="list-style-type: none">Perform a functional check and observe that all LEDs are illuminated.	<ul style="list-style-type: none">If all LEDs are not illuminated replace light as soon as is practicable.	<ul style="list-style-type: none">Lights are not user serviceable.Lights are very bright and to reduce eye strain during inspection use an optical filter such as dark glasses or welding goggles.
Annually, unless the OEM specifies a shorter interval	<ul style="list-style-type: none">Perform a functional check and observe that all LEDs are illuminated.Check mounting, connections, and wire integrity	<ul style="list-style-type: none">If all LEDs are not illuminated, the light must be replaced.Adjust or replace wiring, and connectors as required	

Table 5-1 Periodic Inspections

6 General Installation Procedures

Consult **AC 43.13-1B Ch 11** for guidance on acceptable methods, techniques, and practices. Procedures contained herein are not intended to conflict with procedures set forth by aircraft OEM, nor do they supersede FAA approved manuals and FAA regulations.

6.1 Removal and Installation Procedures

SunSpot 36, 46, and SunBeam lights included in this STC are drop-in replacements for legacy bulbs. The following instructions are general in nature. Please refer to the OEM Aircraft Maintenance Manual for specific removal and installation procedures.

6.1.1 Removal

- Disconnect aircraft power and ground or disable applicable circuit breakers
- Ensure all switches are in the OFF position
- Remove existing lamp(s) from brackets; mark and retain hardware
- Inspect the housing, brackets, attachment points, connectors, and wiring for signs of abnormal wear or damage. Adjust or repair as needed.



6.1.2 Installation

This installation procedure is for single or multiple light installations. See Figure 7-1 through 7-8 wiring diagrams for single, dual, and quad light installations. Reference the OEM Aircraft Maintenance Manual for existing aircraft electrical load capabilities. If the AeroLEDs light(s) chosen for installation are higher wattage than the light(s) being removed, ensure the electrical load is not appreciably affected and ensure that all circuit components such as circuit breakers, wire gauge, switches, relays, etc. are appropriate for the light(s) being installed.

- a. LED light should be installed with a minimum 4-inch clearance to exhaust system components unless adequate heat shielding is utilized to block radiant heat.
- b. Install LED light(s) in brackets using retained hardware from the removal process. For the SunSpot 36 and 46 lights refer to Figure 6-1 and ensure alignment key mates with that of the mounting bracket. Proper orientation of the light is required to ensure the beam is projected horizontally and vertically from center while in operation. When installing a taxi light, ensure that the Fresnel ridges on the face of the light are aligned vertically to produce a horizontal light pattern. The SunBeam light projects its light equally right and left horizontally and up and down vertically and therefore does not require an alignment key.



Figure 6-1 Alignment Key

- c. Install suitable aircraft approved connectors or splices to connect light assemblies to wires routed from switches or breakers in accordance with wiring diagram(s).
- d. Screw terminals are not polarity sensitive on the SunSpot lights. On the SunBeam, the red wire is positive and the black wire is negative..
- e. **Versions with Pulse:** Note that the pulse/wig-wag function is a self-contained feature and does not require use of external control circuitry.
 - i. Yellow wire is used to enable pulse/wig-wag mode
 - ii. Blue and green wires are low current master/slave signals for synchronization in two and four light installations.
- f. Install an appropriate aircraft approved switch and circuit breaker of correct rating for lights installed. In most cases the original landing light switch/switches may be used.
- g. Placard switches appropriately.



- h. Verify proper operation of LED light(s), in both pulse/wig-wag and steady functions (as appropriate to installation)
- i. Refer to OEM aircraft maintenance manual and verify that the light angle has not changed, and is oriented & aimed in accordance with aircraft OEM instructions.
- j. Reinstall hardware in accordance with OEM aircraft maintenance manual.
- k. Perform an operational check of the light(s) to determine that the installed light(s):
 - i. Generate no objectionable glare to the pilot
 - ii. Do not adversely affect the pilot by halation
 - iii. Provide enough light for night operations
 - iv. Will not adversely affect any installed systems or equipment with EMI/RFI interference
- l. Record installation with appropriate logbook entry

Note: The use of shielded cable is recommended although not required for installation.

It is recommended that ground connections for all lights be made at a single location on aircraft central ground bus. This “single point ground” scheme helps to eliminate ground loops and ground bounce that can occur when using airframe as a ground.

6.1.3 Troubleshooting

If light is not functioning properly, try the following steps to correct problem:

- i. Check for proper voltage at power input to the light(s)
- ii. Ensure light is adequately grounded
- iii. Check for continuity in wiring and connections
- iv. If wiring is verified, remove light and bench-check with appropriately sized power supply

If above actions do not correct the problem, please contact AeroLEDs technical support at aeroleds.com or via telephone at 1-208-850-3294.



7 Wiring Diagrams

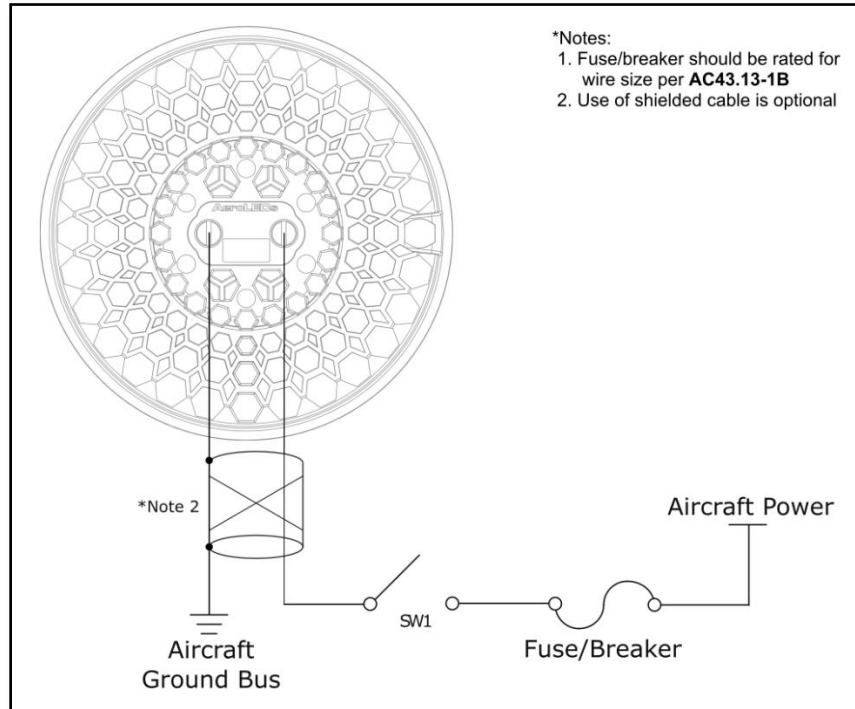


Figure 7-1 Single Mode, Single SunSpot Wiring Diagram

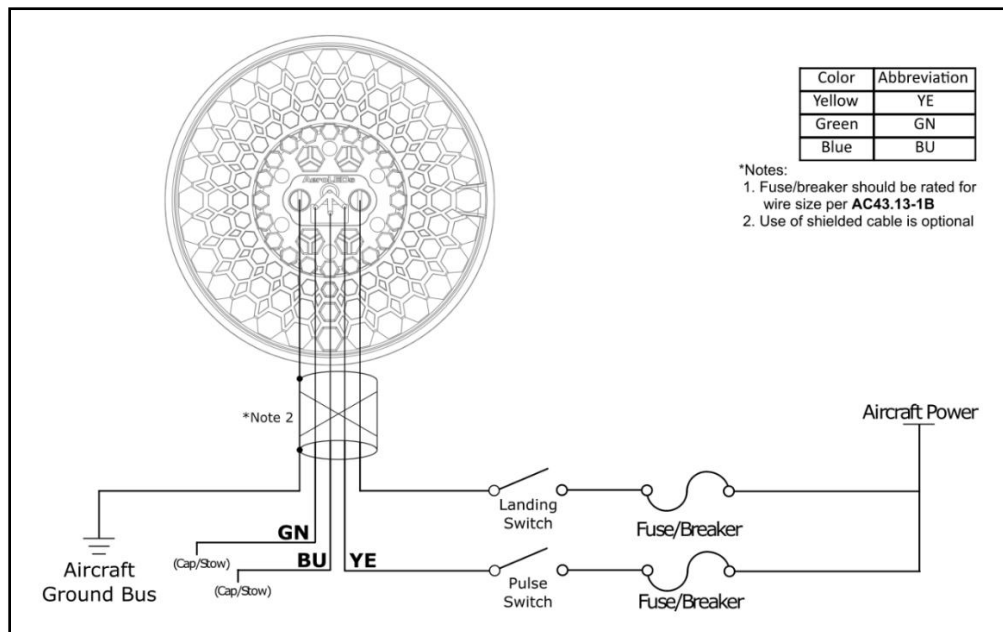


Figure 7-2 Dual Mode, Single SunSpot Wiring Diagram



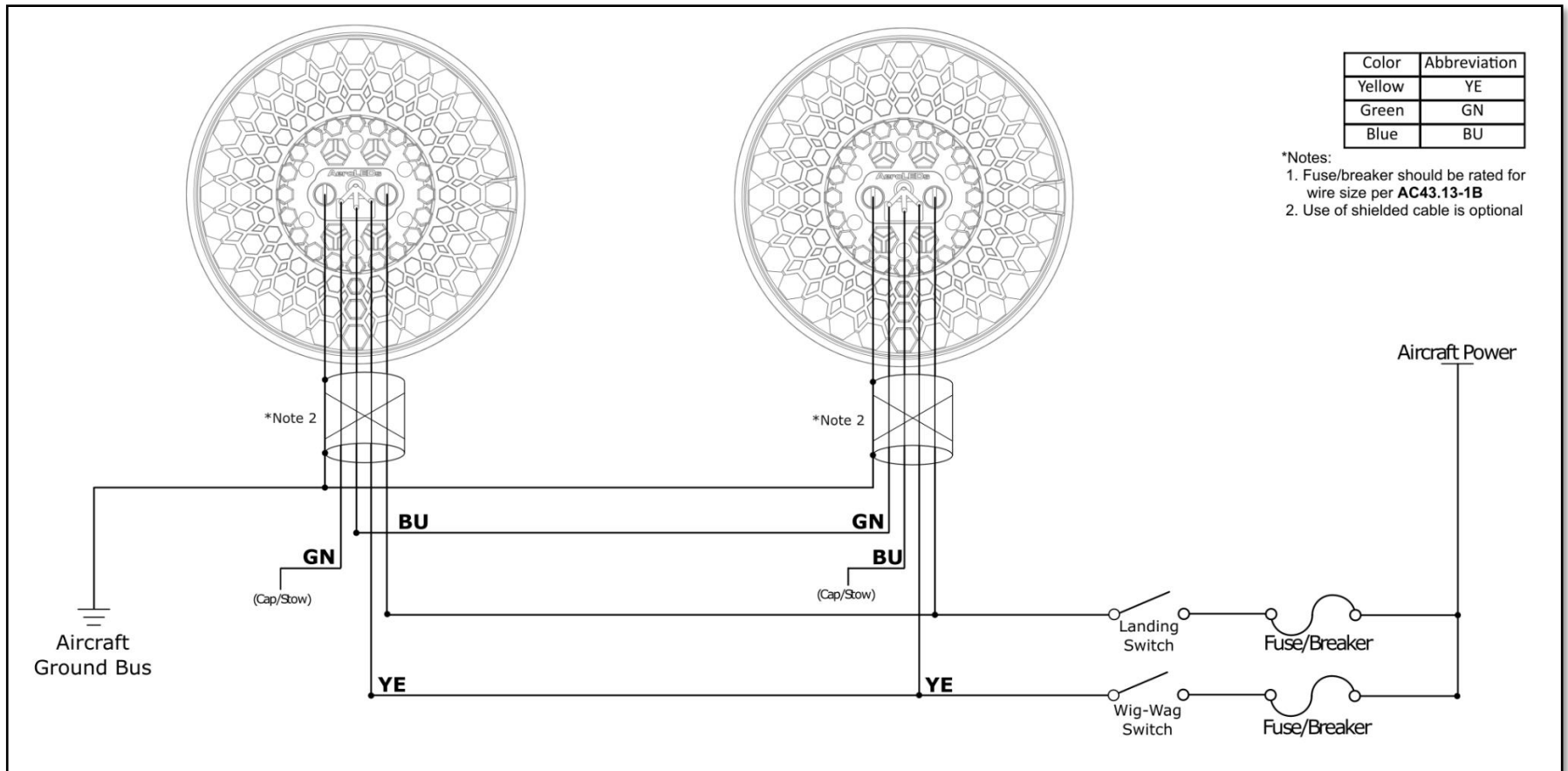


Figure 7-3 Wiring Diagram Dual SunSpot Landing or Taxi with Pulse/Wig-Wag

Note: Landing Switch or Taxi Switch as appropriate



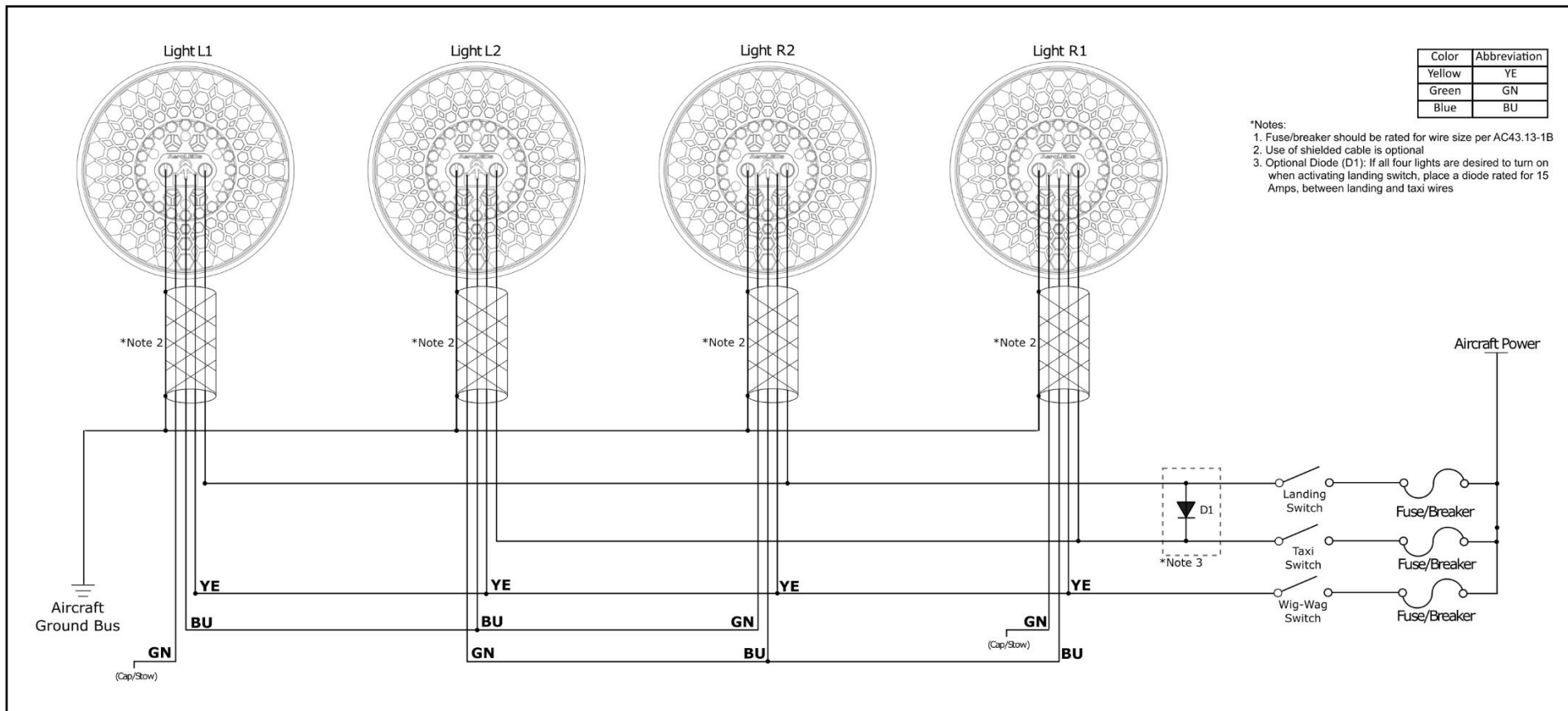


Figure 7-4 Wiring Diagram for Four SunSpot Landing or Taxi Lights with Pulse/Wig-Wag



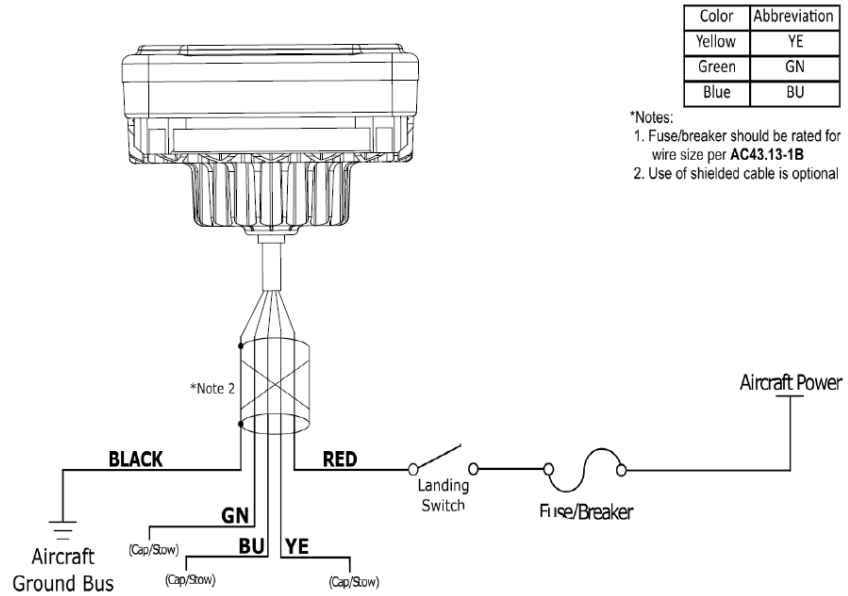


Figure 7-5 Single Mode, Single SunBeam Wiring Diagram

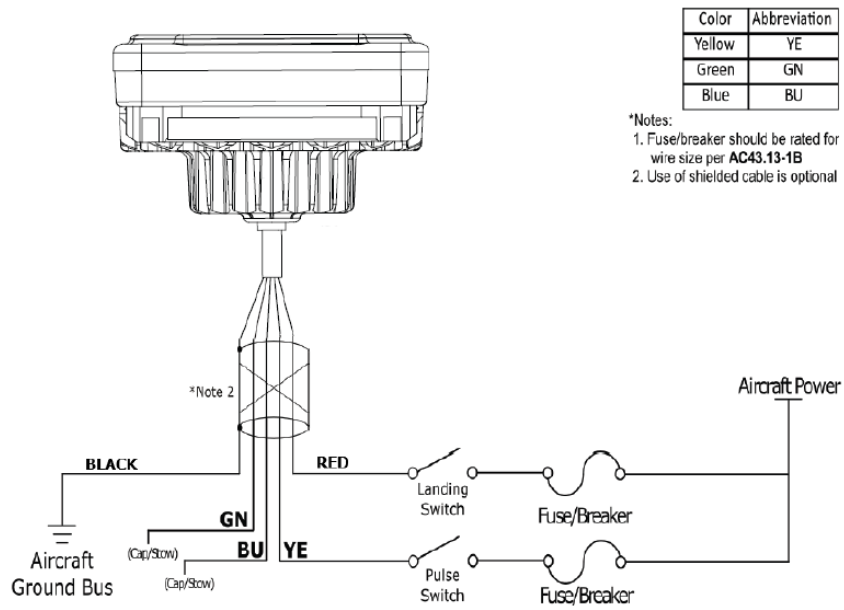


Figure 7-6 Dual Mode Single SunBeam Wiring Diagram



Color	Abbreviation
Yellow	YE
Green	GN
Blue	BU

- *Notes:
 1. Fuse/breaker should be rated for wire size per **AC43.13-1B**
 2. Use of shielded cable is optional

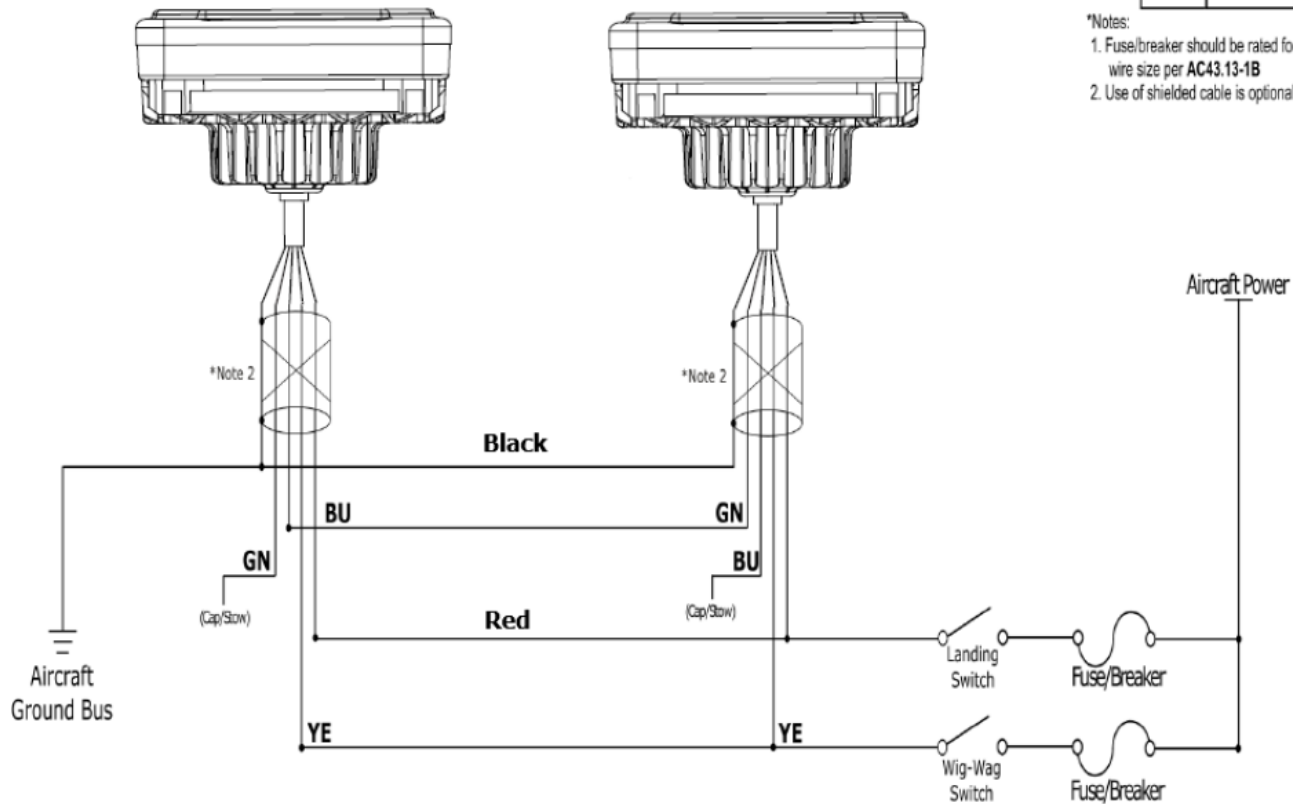


Figure 7-7 Wiring Diagram for Dual SunBeam with Pulse/Wig-Wag



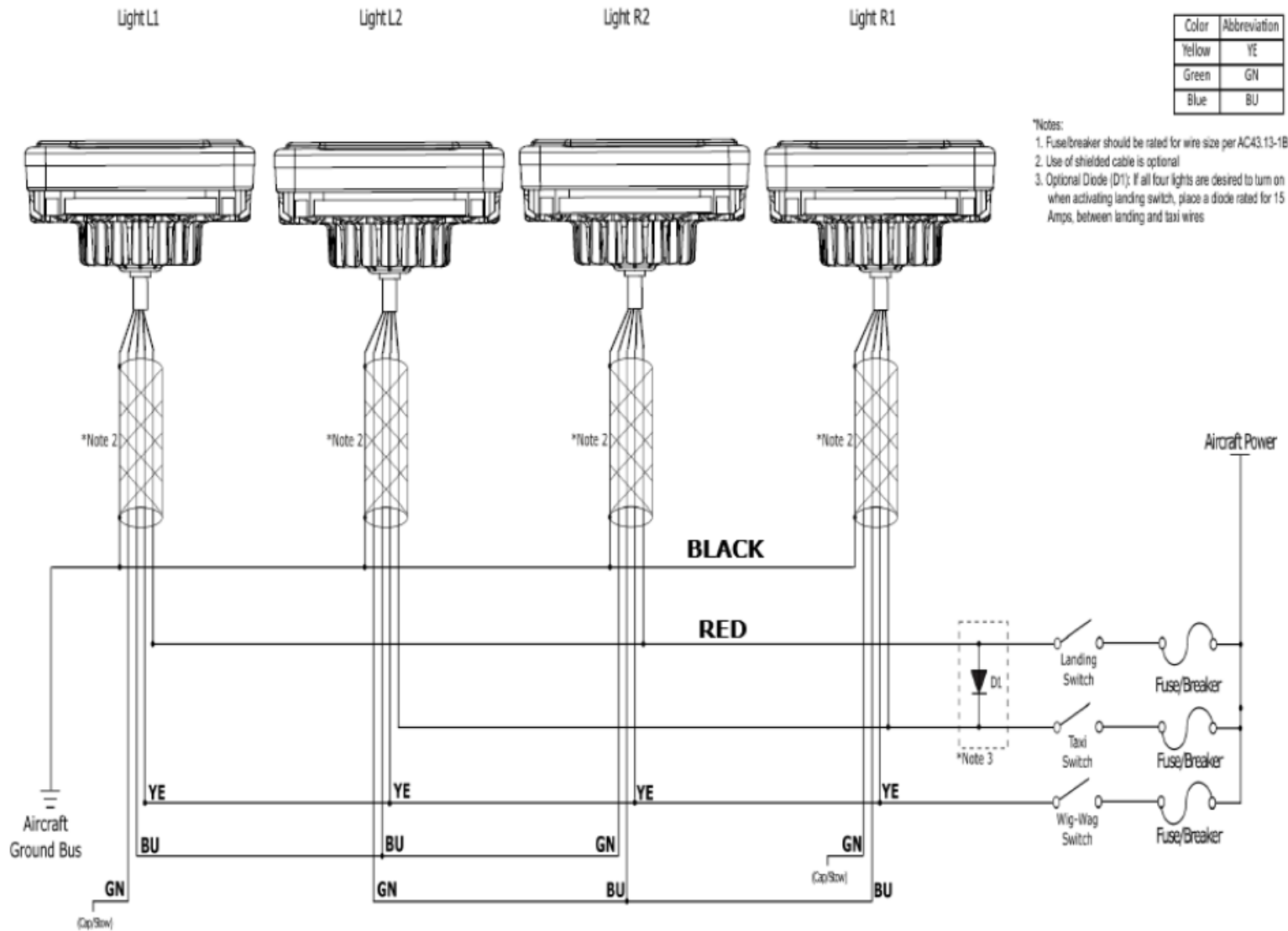


Figure 7-8 Wiring Diagram for Four SunBeams with Pulse/Wig-Wag

