Installation Instructions
Sunspot 36-4000 Series

AeroLEDs, LLC
8475 W. Elisa St.
Boise, ID, 83709
208-850-3294

NOTE: A printed copy of this document may not be the latest revision. It is the responsibility of the user to ensure that the latest revision is used. The latest revision of this document may be printed from the AeroLEDs electronic document repository. Revision history follows on page 2

Approval	Name	Intent	
Author	Jennifer Blanchfield	Installation and operation instructions for the Sunspot 36-4000 series lights	
Check	Nate Calvin		
Quality	Mark McCormack		
Date:	10 February 2023		
Status: Released	Typed signatures indicate approval. Handwritten, or electronic signature approval of this document is on file at AeroLEDs, Boise, Idaho.	**Document Number** 0019-0004	**Revision** H

REVISION RECORD

Rev	Description	Date	Author
H	Updating Logo, wiring diagrams, and information add	02/10/2023	J. Blanchfield
G	Updating ICA, Information and table adds	11/06/2020	J. Blanchfield
F	Add Airworthiness Limitations	08/10/2020	M. McCormack
E	Format, Instruction, and Image updates	04/14/2020	J. Blanchfield
D	Formatting and merged 4313/4314	03/07/2019	K. Cullinane
C	All Pages Revised	05/08/2018	M. D'Amico
B	All Pages Revised	02/12/2018	D. Wilkinson
A	Singular Page Revised	03/28/2017	D. Wilkinson
IR	Initial Revision	06/30/2016	D. Wilkinson

TABLE OF CONTENTS

1 System Description

SunSpot™ 36 4000 series Landing and Taxi lights are designed as LED drop-in replacements for existing PAR36 light configurations. The AeroLEDs SunSpot™ lights are designed to provide a wide beam pattern at an increased intensity with full-scale color rendering. The SunSpot™ 36 is a two terminal light, with the -H versions including additional wires for integrated Pulse/WigWag mode to significantly increase recognition.

2 Model Numbers

SunSpot 36-4000 series (75W)

Model	Part Number	Description	Voltage (V)	Current (Amps)	Power (W)	Weight (oz)
SunSpot 36-4509	01-1030-4509	Landing	14	5.4	75	11.2
	01-1030-4509-H	Landing w/Pulse				
SunSpot 36-4519	01-1030-4519	Taxi				
	01-1030-4519-H	Taxi w/Pulse				
SunSpot 36-4591	01-1030-4591	Landing	28	2.7		
	01-1030-4591-H	Landing w/Pulse				
SunSpot 36-4626	01-1030-4626	Taxi				
	01-1030-4626-H	Taxi w/Pulse				

Table 1

SunSpot 36-4000 series (100W)

Model	Part Number	Description	Voltage (V)	Current (Amps)	Power (W)	Weight (oz)
SunSpot 36-4313	01-1030-4313	Landing	14	6.8	95	11.5
	01-1030-4313-H	Landing w/Pulse				
SunSpot 36-4314	01-1030-4314	Taxi				
	01-1030-4314-H	Taxi w/Pulse				
SunSpot 36-4596	01-1030-4596	Landing	28	3.6	100	
	01-1030-4596-H	Landing w/Pulse				
SunSpot 36-4587	01-1030-4587	Taxi				
	01-1030-4587-H	Taxi w/Pulse				

Table 2

2.1 Modes of operation(-H lights only)

Mode	Switch Position	Mode	Switch Position	Function
Pulse	Open	Landing	Open	Light OFF
	Open		Closed	Landing
	Closed		Open	Pulse
	Closed		Closed	Pulse

Note: Refer to §5 Wiring Diagrams

Table 3

2.1 Current consumption per input

SunSpot 36-4000 series (75W)

Model	Part Number	Modes	Inputs				
			PWR 14VDC*	GND	YLW	BLU	GRN
SunSpot 36-4509	01-1030-4509	Landing Only	5.4A	5.4A	NA		
	01-1030-4509-H	Landing Mode	5.4A		NA	≤10mA	
		Pulse Mode	NA		5.4A		
SunSpot 36-4519	01-1030-4519	Taxi Only	5.4A		NA		
	01-1030-4519-H	Taxi Mode	5.4A		NA	≤10mA	
		Pulse Mode	NA		5.4A		
			28VDC*				
SunSpot 36-4591	01-1030-4591	Landing Only	2.7A	2.7A	NA		
	01-1030-4591-H	Landing Mode	2.7A		NA	≤10mA	
		Pulse Mode	NA		2.7A		
SunSpot 36-4626	01-1030-4626	Taxi Only	2.7A		NA		
	01-1030-4626-H	Taxi Mode	2.7A		NA	≤10mA	
		Pulse Mode	NA		2.7A		

*Nominal

Table 4

SunSpot 36-4000 series (100W)

Model	Part Number	Modes	Inputs				
			PWR 14VDC*	GND	YLW	BLU	GRN
SunSpot 36-4313	01-1030-4313	Landing Only	6.8A	6.8A	NA		
	01-1030-4313-H	Landing Mode	6.8A		NA	≤10mA	
		Pulse Mode	NA		6.8A		
SunSpot 36-4314	01-1030-4314	Taxi Only	6.8A		NA		
	01-1030-4314-H	Taxi Mode	6.8A		NA	≤10mA	
		Pulse Mode	NA		6.8A		
			28VDC*				
SunSpot 36-4596	01-1030-4596	Landing Only	3.6A	3.6A	NA		
	01-1030-4596-H	Landing Mode	3.6A		NA	≤10mA	
		Pulse Mode	NA		3.6A		
SunSpot 36-4587	01-1030-4587	Taxi Only	3.6A		NA		
	01-1030-4587-H	Taxi Mode	3.6A		NA	≤10mA	
		Pulse Mode	NA		3.6A		

*Nominal

Table 5

3 Airworthiness Limitations

The Airworthiness Limitations section is FAA approved and specifies maintenance required under **14 CFR, §43.16** and **14 CFR, §91.403** of the Federal Aviation Regulations unless an alternative program has been FAA approved. There are no additional airworthiness limitations.

3.1 Instructions for Continued Airworthiness

Sunspot series LED landing or taxi light assembly contains no user serviceable items. Should any LED fail, unit must be replaced.

Interval	Inspection	Remedy	Notes
Pre-Flight	• Perform a functional check and observe that all LEDs are illuminated	• If all LEDs are not illuminated replace light as soon as is practicable	• 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	• Perform a functional check and observe that all LEDs are illuminated • Check mounting, connections, and wire integrity	• If all LEDs are not illuminated, the light must be replaced • Adjust or replace wiring, and connectors as required	

Table 6

4 Installation

Consult **14CFR, §43.13-1B** for guidance on acceptable methods, techniques, and practices. Mount in approved bulb holder. For retrofit installation existing circuit breaker or fuse may typically be used. 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.

4.1 Installation Procedures

1. Reference the airframe manufacturer's maintenance manual to complete the following steps
2. 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 (circuit breaker, wire, switches, relays, etc., as applicable) are appropriate for the light(s) being installed

3. Prepare aircraft for maintenance:
    a. Disconnect aircraft power and ground
    b. Ensure all switches are in the OFF position
    c. Pull landing/taxi light circuit breakers
    d. Remove light covers to gain access to lamp assembly(s) and bracket(s)
    e. Remove existing lamp(s) from brackets, mark and retain hardware
    f. Record weight of removed lamps
4. This installation procedure is for single or multiple light installations. Wiring diagrams are provided for single, dual, and quad light installations. For lights without pulse, existing aircraft wiring, switches and breakers may be utilized.
5. **Versions with Pulse:** Pulse function is a self-contained feature and does not require use of external control circuitry. An additional wire, switch, or switch position will be required to enable pulse mode, and for multiple lights an additional synchronization wire installation will be required.
6. Refer to aircraft manufacturer's service manual and/or illustrated parts catalog to identify landing and/or taxi light system installed in your aircraft. This will provide information on location of components and assembly details
7. Mount LED light with a minimum 4-inch clearance to exhaust system components, ensure adequate heat shielding is utilized to block radiant heat.
8. Reference airframe manufacturer's current maintenance manual and install LED light(s) in brackets using retained hardware
9. Ensure alignment key is fitted to bracket
10. Install suitable aircraft approved connecters or splices to connect landing light assemblies to wires routed from switch in accordance with wiring diagram(s).
11. **Screw terminals are not polarity sensitive**

    a. Yellow wire is used to power pulse mode (**see Table 4 & 5**)
    b. Blue and green wires are low current signals for synchronization in two and four light installations (**see Table 4 & 5**)
    c. Install an appropriate aircraft approved switch and circuit breaker of correct rating for lights installed for pulse function. Original landing light switch/switches may be used.

12. Placard switches appropriately.
13. Verify proper operation of LED light(s), in both pulsing and steady functions (as appropriate to installation)
14. Using appropriate aircraft maintenance manual, verify light angle has not changed, and is oriented & aimed in accordance with manufacturer's instructions
15. Reinstall associated light hardware IAW aircraft maintenance manual
16. Perform an operational check of the light(s) to determine that the installed light(s):
    a. Generate no objectionable glare to the pilot
    b. Do not adversely affect the pilot by halation
    c. Provide enough light for night operations, including hovering and landing
    d. Will not adversely affect any installed systems or equipment with EMI/RFI interference
17. 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.

4.2 Troubleshooting

1. Check for proper voltage at power input wire to light
2. Ensure light is adequately grounded
3. Check for continuity in wiring and connections
4. If wiring is verified, remove light and bench-check with appropriately sized power supply

If above actions do not correct problem, contact AeroLEDs tech support at 1-208-850-3294 for a resolution.

5 Wiring Diagrams

5.1 Wiring Diagram for Single SunSpot without Pulse

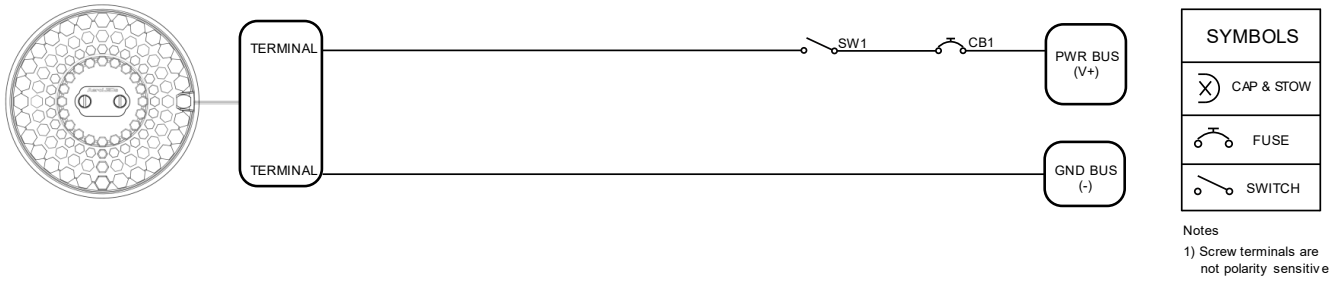

Figure 1

5.2 Wiring Diagram for Single SunSpot with Pulse

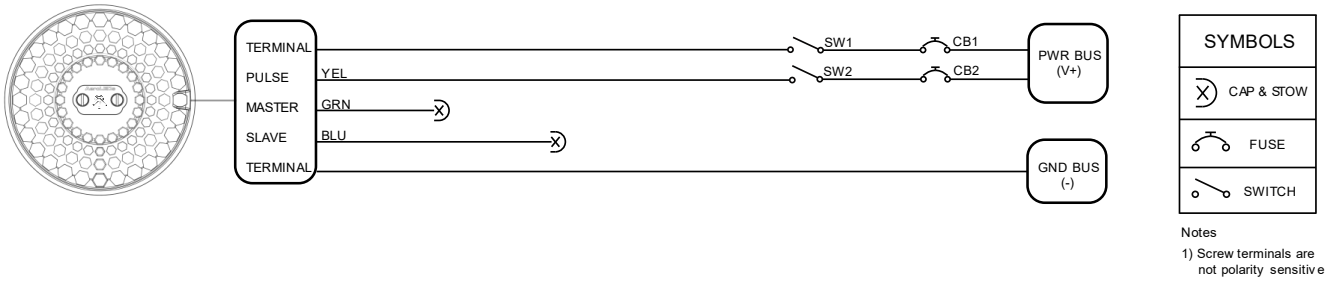

Figure 2

5.3 Wiring Diagram for Dual SunSpots with Pulse (WigWag)

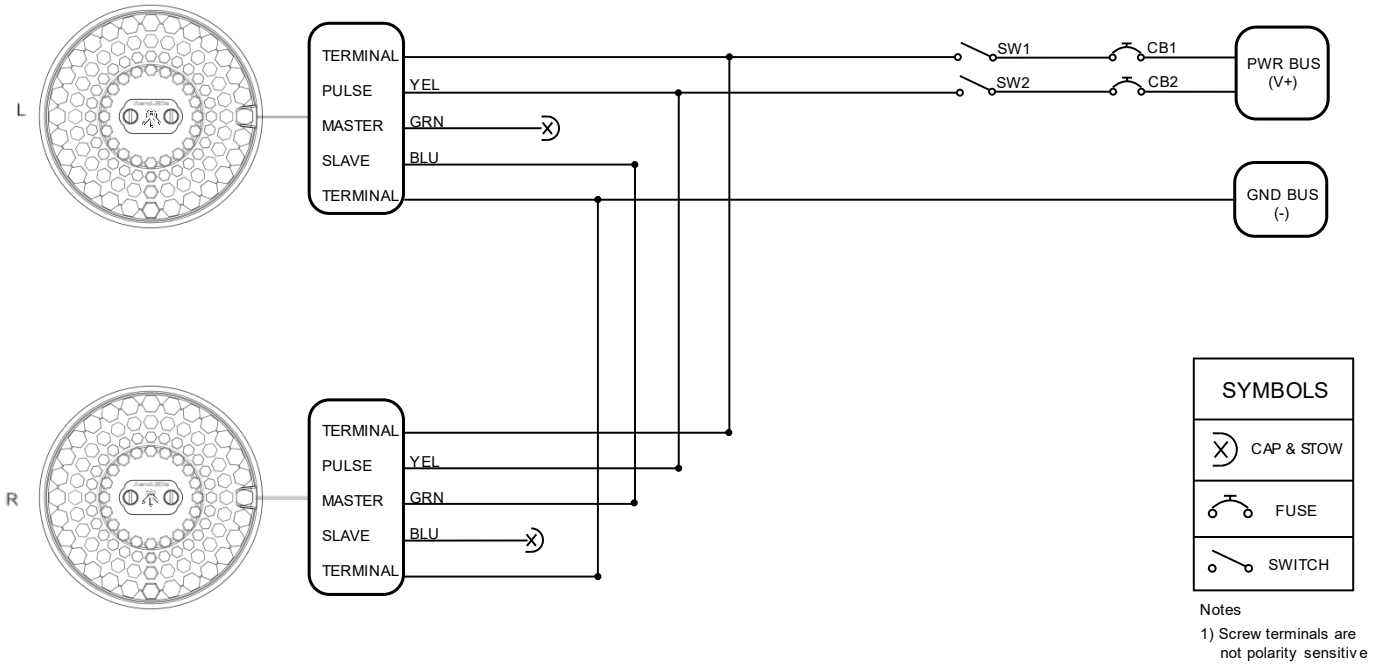

Figure 3

If lights are installed in close proximity (within two feet), install using an AeroLEDs sync circuit

- AeroLEDs part number 00-8120
- Installation Guide 0017-0002

5.4 Wiring Diagram for Four LED SunSpots with Pulse (WigWag)

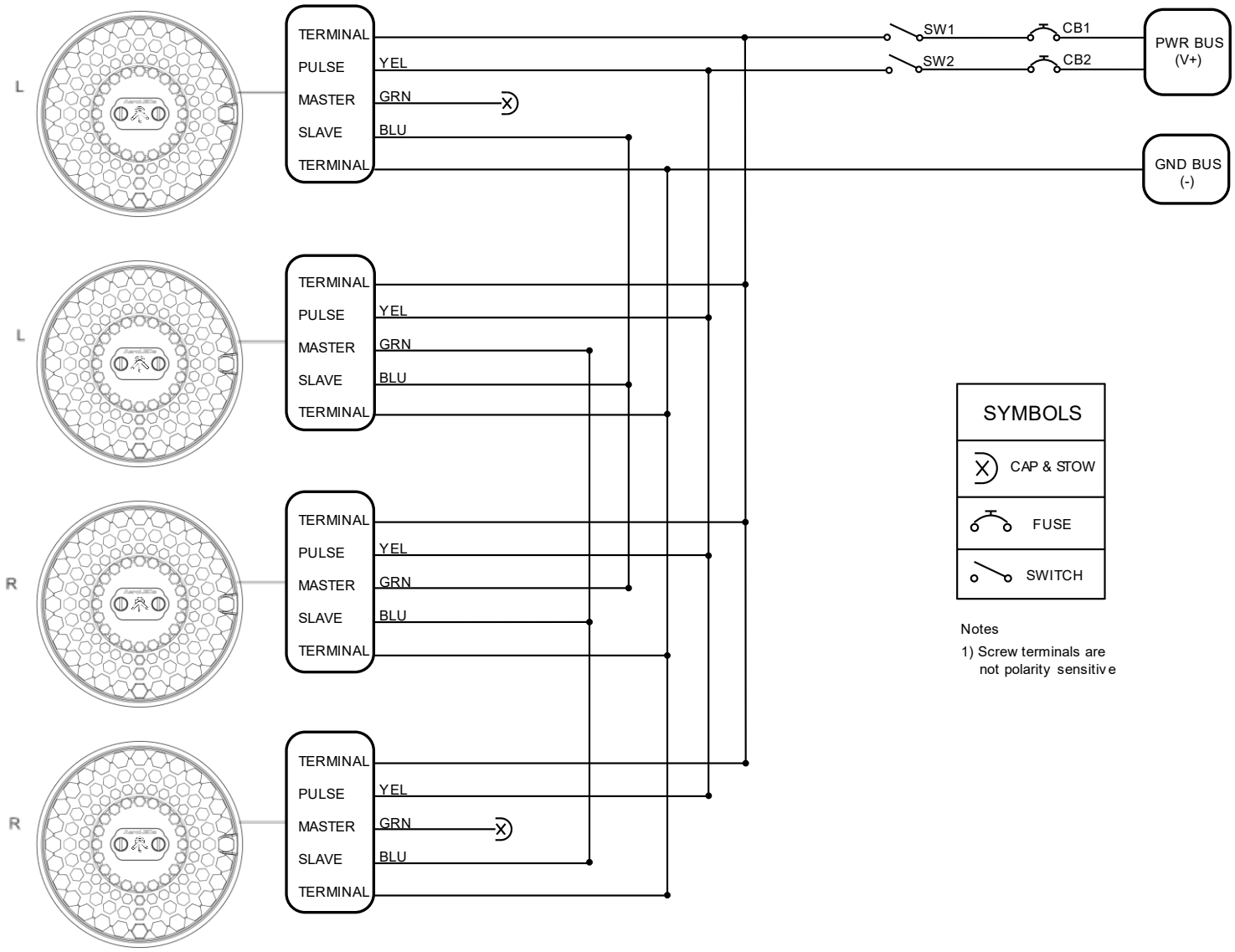

Figure 4