INSTALLATION REPORT NO. **08076**

Document Number: 025PMAN0001

Aircraft Serial Number: _____

STC Number: _____

PRECISE FLIGHT, INC.
63354 POWELL BUTTE ROAD
BEND, OR 97701
800- 547-2558

Pulselite® Starlight® Model 3060 Series Installation Manual

Model 3060

Model 3060A

Model 3060S

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REVISIONS

Rev.	DESCRIPTION OF CHANGES	Author	Date	Approved By	Approved Date
-	Original release				
A	Adjusted section headers, corrected/added drawing and table captions with cross references, revised number of channels, coltages, corrected size callouts, added certification date, revisised maximum load table, and revised wiring diagrams and pinout tables.	DJC	9/22/2000	STP	9/22/2000
B	Revised 3060-S schematic, and connector pinout diagrams	DJC	10/5/2001	STP	10/5/2001
C	Added 3060 Synched units revised 43.13 references.	DJC	7/10/2002	STP	7/10/2002
D	Updated format of whole document, added TCAS / TCAD references, Added reference to 000PMAN0002 for Pulselite ICA document. Expanded EMI/RFI sections for easier documentation of applicable systems. Added better installation guidelines for the physical installation of the Pulselite and for the Slidelock connector. Added GPS to Loran-C check. (Track Changes not used due to New Formatting)	JNS	1/19/2006	JNS	1/20/2005

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1.0 OVERVIEW

1.1 PURPOSE

The Precise Flight Inc. Pulselite® Starlight® system is a solid-state electrical switching unit that pulses the aircraft's existing external lights, such as the Landing, Taxi, Recognition, Hover, or Logo Lights. The lights are pulsed in variety of patterns at 45 times per minute to create an illusion of exaggerated motion. This illusion enhances aircraft recognition in flight, similar to the manner that the flashing lights on an emergency vehicle do for automobiles. The Pulselite system can also be coupled to the aircraft's TCAS system, automatically activating the lights for the duration of a TCAS "Traffic Advisory."

The Pulselite system does not effect normal operation of the aircraft lighting system. The Pulselite simply bridges the existing aircraft light switches and/or relays allowing the pilot to turn on his external lights at any time, by moving the original light switches to the ON position. When the pilot switches the applicable external lights off and the Pulselite is switched to PULSE, the Pulselite function will resume. The original switch(es), and any additional Pulselite control switch(es), need to be switched off to extinguish the lights.

The TCAS option allows automatic control of the Pulselite function for the duration of traffic advisory. By placing the Pulselite TCAS control switch in the ACTIVE, the TCAS processor will initiate pulsing of the external lights when the TCAS system signals a "Traffic Event". In night IMC conditions this switch should be in the OFF position. The Pulselite "Pulse" and "Traffic Event" pulse functions may be controlled by a separate Pulselite switch or incorporated into the existing Strobe or Logo light switches.

The Pulselite Starlight Model Series 3060 control circuits require 12 / 28VDC for control power. Two separately controlled power circuits of the Model 3060 Series are to pulse two DC or AC powered aircraft lamps (Up to 500 watts per lamp).

1.1.1 Pulselite Control Unit Specifications

• Control Unit Weight:	Approximately 1.0 lbs. (0.45 kg)
• Control Unit Dimensions:	5.45in W, 3.69in D, 2.24in H (13.84cm W, 9.37cm D, 5.68cm H)
• Ambient Operating Range:	-50°F to +158°F (-45°C to +70°C)
• Control Unit Cooling:	Radiation and Convection
• Control Unit Operating Voltage:	11-29 VDC (Control Power)
• Control Unit Operating Current:	Less than 0.05 Amps
• Lamp Power – Switching Voltage:	28VDC (Model 3060) 115 VAC 60-400 Hz (Model 3060-A) 28VDC (Model 3060-S)
• Lamp – Capacity:	300 Watts per channel (3060) 500W AC (3060-A) 500W DC (3060-S)
• Available Lamp Outputs:	2 Channels (1 Channel pulse on alternately with 1 channel off in Alternate mode, or 2 Channels on / 2 Channels off in simultaneous mode)
• Pulse Frequency:	Approximately 45 $\pm$ 5 Pulses per minute

1.1.2 Pulselite Kit Contents

Pulselite Model 3060 Kit may include:

a) Pulselite Control Unit (Model 3060, 3060-A, or 3060-S)
b) Copy of the Supplemental Type Certificate
c) Permission letter for using the STC
d) Switches or Switch Specification
e) Wire Harness or Wiring Harness Drawing
f) Installation Wiring Diagrams
g) Installation Drawing

1.2 INSTALLATION OVERVIEW

1. Read through the entire manual, and become familiar with the drawings, before beginning any part of the installation process.
2. Unpacking, Inspection, and Bench testing.
3. Mount the control unit to the aircraft.
4. Install the Pulselite circuit breaker and switches in the cockpit.
5. Route the wiring harnesses and terminate the wires with the appropriate connectors.
6. Functionally check the Pulselite System.
7. Filling out necessary FAA paperwork and logbook entries to return the aircraft to service.
8. Complete and return the warranty card to Precise Flight, Inc.

1.2.1 Installation Approval Basis

The person or organization, which performs or supervises the installation of the Pulselite Model 3060, may be required to prepare FAA form 337. See Figure 14 for a Sample Description of Work Accomplished. Data that can be used as a basis for approval for return to service are:

1. AC 43.13-1B; Acceptable Methods, Techniques and Practices, Aircraft Inspection and Repair. (Or later AC 43.13 revision)
2. AC 43.13-2A; Acceptable Methods, Techniques and Practices, Aircraft Alterations (or later AC 43.13 revision)
3. FAA approved Manufacturer's Installation Instructions.

Equipment installation procedures do not differ significantly among various aircraft. The installation and operation of the Pulselite Model 3060 does not materially affect the aircraft operation or performance.

The Sample Description of Work Accomplished (See Figure 14) is suggested language and is provided as a convenience to the installing agency. The information and wording should be modified to correctly describe the particular installation.

Precise Flight Inc. can assume no responsibility for the alteration of the airframe or electrical system.

1.2.2 Environmental Qualifications

This section is provided for proof of environmental testing performed by Precise Flight Inc. during certification of this unit for STC applications.

NOMENCLATURE PULSELITE
MODEL NUMBER: 3060
MANUFACTURER SPECIFICATION: PULSELITE PERFORMANCE REQUIREMENTS
MANUFACTURER: PRECISE FLIGHT INC.

Table 1 – DO-160D Test Table

CONDITIONS	DO-160D SECTION	DESCRIPTION OF TESTS CONDUCTED
TEMPERATURE AND ALTITUDE	4.0	CATEGORY F2
TEMPERATURE VARIATION	5.0	CATEGORY B
HUMIDITY	6.0	NOT REQUIRED
OPERATIONAL SHOCK AND CRASH SAFETY	7.0	NOT REQUIRED
VIBRATION	8.0	CATEGORY C
EXPLOSION	9.0	CATEGORY E & H
WATERPROOFNESS	10.0	CATEGORY W
FLUIDS SUSCEPTIBILITY	11.0	NOT REQUIRED
SAND AND DUST	12.0	NOT REQUIRED
FUNGUS	13.0	NOT REQUIRED
SALT SPRAY	14.0	NOT REQUIRED
MAGNETIC EFFECT	15.0	CLASS C
POWER INPUT	16.0	CATEGORY Z
VOLTAGE SPIKE CONDUCTED	17.0	CATEGORY A
AUDIO FREQUENCY CONDUCTED SUSCEPTIBILITY	18.0	CATEGORY Z
INDUCED SIGNAL SUSCEPTIBILITY	19.0	CATEGORY Z
RADIO FREQUENCY SUSCEPTIBILITY	20.0	CATEGORY A
RADIO FREQUENCY EMISSION	21.0	CATEGORY B

1.2.3 Aircraft Certification

Unless otherwise provided, the Pulselite 3060 series is approved by the following STCs.

Type of Certification: Supplemental Type Certificate
Certification Number: SA00560SE, SA2622NM, SA4005NM, SH3319NM
(Other STC's may be added and not listed)
Certification Basis: Approved Model Listing
Certification Date: Various

1.3 How to Use This Manual and Read the Drawings

1.3.1 Notes and Warnings

Because of the uniqueness of this installation in existing aircraft, Precise Flight has added notes, cautions, and warnings to the installation manual.

NOTE

Notes are used to emphasize certain steps to prevent problems with the installation. We, at Precise Flight, have added these notes to prevent problems before they occur based on our experience installing these systems, or from 'your' feedback.

! **CAUTION** !

Cautions are used if aircraft damage can occur due to a missed step. Please remember, we only have these in key locations based on previous experience. It is the installer's responsibility to make sure the installation is done correctly, and to airworthiness standards.

!! WARNING !!

Warnings are used to emphasize a part of the installation where if done incorrectly can pose a serious hazard to the installer or the pilot.

1.3.2 Drawing Interpretation

All drawings produced by Precise Flight Inc, are based on ASME Y14.5-1994 standards, measurements in Inches, and Third Angle Projection. Information on the drawings including notes, parts, etc. are part of the FAA approved design and in most cases do include important installation and manufacturing information.

Third Angle Projection is the method drawing views are produced as shown in Figure 1.

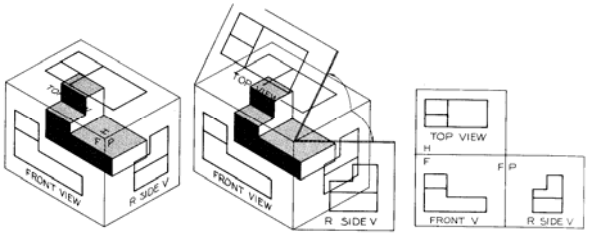


Figure 1 – Third Angle Projection Example (Earle, James. "Engineering Design Graphics")

1.3.3 Parts Lists

A source of possible confusion when reading drawings is the proper interpretation of the parts list or Bill of Materials (BOM). This STC includes multiple aircraft models and lamp/switch configurations in the same drawing package. Because of the differences, special care must be taken to make sure the correct installation is used.

1	-	1	-	-	152P0120-2	737 PULSELITE UNIT INSTALLATION	(737-600,-700,-800)	17
-	1	-	1	-	152P0120-1	737 PULSELITE UNIT INSTALLATION	(737-300,-400,-500)	16
1	-	-	-	-	152P0110-4	737 P5 PANEL MOD. – PLAIN LEVER	(737-600,-700,-800)	17
-	1	-	-	-	152P0110-3	737 P5 PANEL MOD. – PLAIN LEVER	(737-300,-400,-500)	16
-	-	1	-	-	152P0110-2	737 P5 PANEL MOD. – JEWELED LEVER	(737-600,-700,-800)	17
-	-	-	1	-	152P0110-1	737 P5 PANEL MOD. – JEWELED LEVER	(737-300,-400,-500)	16
OPT	-	OPT	-	-	152P0107 SH 2	737 RUNWAY TURNO	(737-600,-700,-800)	15
-	OPT	-	OPT	-	152P0107 SH 1	737 RUNWAY TU	(737-300,-400,-500)	14
OPT	-	OPT	-	-	152P0106-1	737 TCAS INTE	(737-600,-700,-800)	13
-	OPT	-	OPT	-	152P0106-1	737 TCAS	(737-300,-400,-500)	12
1	1	1	1	-	152P0105	737 CIR	(737-300 THRU -800)	11
OPT	-	OPT	-	-	152P0104 SH 2	7	(737-300,-400,-500)	10
-	OPT	-	OPT	-	152P0104 SH 1		(737-400)	9
1	-	1	-	-	152P0103-2	7	(737-600,-700,-800)	8
-	1	-	1	-	152P0103-1	73	(737-300,-400,-500)	7
1	1	1	1	-	152P0102	737	-----	6
-	-	-	-	-	-----	-----	-----	5
\	-	-	-	-	-4	PULSELITE INSTL (PLAIN SW)	(737-600,-700,-800)	4
-	\	-	-	-	2P0101-3	PULSELITE INSTL (PLAIN SW)	(737-300,-400,-500)	3
-	-	\	-	-		737 PULSELITE INSTL (JEWELED SW)	(737-600,-700,-800)	2
-	-	-	\	-		737 PULSELITE INSTL (JEWELED SW)	(737-300,-400,-500)	1
-4	-3	-2	-1	CODE		DESCRIPTION	MATERIAL/MFG.	ITEM
QTY REQD								

Figure 2 – Sample Parts List from Drawing 152PS0101

This chart shows us the kit part number 152P0101-3 as an example. Because all 737 models listed on the STC are applicable, this installation would be used for any Boeing 737 as described in section 2.0 of this document, or on the STC certificate.

From here, the installer moves to the left until a "\" marks that applicable installation. Follow the column up to see if another installation or quantity of parts is required. Then follow the chart back to the right to find the drawing/part number for the applicable installation. Some installations or diagrams listed as optional are left to the discretion of the installing agency. Drawings are shown in this example, but parts work on the same principle on the other installation drawings.

The Code numbers are PFI reference only inventory codes and do not supersede the part numbers. The installations kit parts may be identified with by one or more of the following: drawing number, PFI Code, or MS/NAS/AN number.

1.4 IMPORTANT INSTALLATION NOTES

This section lists specific installation notes of importance for this STC installation.

NOTE

It is the installer's responsibility to verify that the installation of the Pulselite Control system will not interfere with any existing modification on the aircraft prior to starting the installation. Contact Precise Flight if there appears to be an installation conflict.

1.5 LIST OF TOOLS REQUIRED

Each section will include a list of tools required for that section.

Table 2 – Tools and Supplies Required

Abrasive Pad
AC 43.13-1B Chapter 11 (or latest revision)
"Caterpillar" protective Grommet
Contact Insertion/Removal Tool
Crimp Tool
Deburring Tool
Double Sided Tape
Drill Motor
Drills: As Required
Lacing Cord
Pencil
Ruler: 12 inch (minimum)
Screw driver: Slot and Phillips #1 and #2 tip
Tape Measure: 2 feet minimum
Teflon Sleeving (Optional)
Volt Ohmmeter
Wire Crimper, Cutter, and Stripper
Wrenches As Required

1.6 LIST OF SUPPLIES REQUIRED

Each section will include a list of all necessary parts for that section.

NOTE
Alternative, appropriately sized contacts or terminal lugs may be used in accordance with AC43.13 as required.

1.7 LIST OF ABBREVIATIONS

This section is to provide the reader with a complete state of the abbreviations used in this document and installation.

Table 3 – List of Abbreviations

A/R	As Required
AC	Advisory Circular
AMM	Airplane Maintenance Manual
BL	Butt Line
CB	Circuit Breaker
DC	Direct Current
FAA	Federal Aviation Administration
FS or STA	Fuselage Station (Flight Station)
IAW	In Accordance With
ICA	Instructions for Continued Airworthiness
In	Inch
IR	Initial Release
Lb, lbs	Pounds
PCU or PLCU	Pulselite Control Unit
PFI	Precise Flight, Inc.
MM	Maintenance Manual
N/A or '-'	Not Applicable
N/C	No Connect
SWPM	Standard Wiring Practices Manual
V	Volts
VAC	Volts Alternating Current
VDC	Volts Direct Current
WDM	Wiring Diagram Manual
WL	Water Line
WS	Wing Station

1.8 MANUAL AND ICA REVISIONS

To ensure the maintenance, and airworthiness, of your existing aircraft fleet, possible revisions to this manual and especially the document references in Section 4.0 Instructions for Continued Airworthiness may require updating over the life of the aircraft. Per the applicable Federal Aviation Regulations, an update process is required to properly maintain these instructions in addition to the aircraft itself. Because of this, it is imperative to complete the registration card for the aircraft once the system is installed.

Revisions can be made by a service letter from Precise Flight, an Airworthiness Directive as issued by the administrator, by single page updates, or a complete replacement of all pages of the manual. It must be clearly noted as to the revision level of the pages listed in The List of Active Pages. If a single sheet(s) is replaced, replace the list of active pages with the new one provided, or update the list manually and initial and date the list.

2.0 INSTALLATION INSTRUCTIONS

2.1 GENERAL

Read all installation instructions prior to starting the installation or modifying the aircraft. If necessary, please contact Precise Flight Incorporated at (541) 382-8684 and ask for Pulselite assistance, or write us at the address above, if you have any questions.

The Pulselite Model 3060 should be installed according to this manual and AC 43.13-1A and -2A (or later AC 43.13 revision.) Cable harnesses and mechanical supports must be fabricated by the installing agency to these requirements or supplied by Precise Flight for specific aircraft installations. This section contains interconnect diagrams, mounting dimensions, and other information pertaining to a Pulselite installation.

2.1.1 Unpacking and Inspection

Exercise care when unpacking the equipment. Make a visual inspection of the unit for evidence of damage incurred during shipment. If a claim for damage is to be made, save the shipping container to substantiate the claim. The claim should be filed with the transportation company. Retain the container and packaging material after the equipment has been removed, should equipment storage or reshipment become necessary.

2.1.2 Initial Bench Check

Every Pulselite Model 3060 has been checked for operation before shipment. The installing agency can verify proper Pulselite operation before final installation by utilizing Section 2.7.3 as a guide for this procedure.

2.1.3 Cooling

Elevated operating temperatures reduce reliability. Forced air-cooling is not required; however, allow approx. 1” of space around the control unit, for adequate convective cooling. Space is most critical on the unit sides so that the heat sink fins may dissipate heat at the proper rate.

2.1.4 Selecting Pulse Mode - Alternate or Simultaneous Pulsing

Where practical, Precise Flight recommends pulsing the desired exterior lights in a side-to-side, or wig-wag fashion. This “Alternate” mode is best suited for lights that are separated by at least one and a half to two feet apart. Alternating two lamps in closer proximity will, at a distance, simply appear to flicker. Greater contrast may be achieved by pulsing two adjacent lamps at the same time in the “Simultaneous” mode.

The Alternate mode will also be easier on the aircrafts electrical system. Two 250 watt lamps illuminated at alternate times result in a single 9 amp load to a 28 volt aircraft. The net result is a reduced overall load to the electrical system that is less than turning both lamps on steady. The same two lamps pulsing simultaneously will cause an 18 amp load to pulse on and off. This may cause some interior lamps to dim and the ammeter needle to jump. While this should not present a problem or real cause for concern, it may be distracting.

Some lighting circuits may be easier to wire for the Simultaneous mode. For example, wiring a single channel or two paralleled Pulselite channels, in the Simultaneous mode is the easiest way to pulse two wing tip lights wired to a single pole toggle switch. To pulse the same lights in the Alternate mode, either install a two pole switch or install two diodes to isolate the lamps.

2.1.5 Wiring Suggestions

As the Pulselite system merely parallels the existing lighting control system, lamp power into the Pulselite unit may come from the same circuit breaker that feeds the existing lamp, or from a separate lamp power breaker to isolate the Pulselite system. If separate circuit breakers are utilized, care must be used to ensure multiple bus systems do become crossed.

2.1.6 Switches

In general, it is preferable to retain original switch functionality. An existing landing light switch, supplemented with an additional Pulselite switch, is easily operated by a pilot familiar with the aircraft but not the Pulselite system.

Where panel space is at a premium, a two position ON-OFF light switch can usually be replaced with a three position ON-OFF-PULSE switch. For systems using circuit breaker switches, a separate breaker switch would be required.

For Pulselite systems incorporating TCAS to initiate pulsing in response to a Traffic Event, several options are available to suit a pilot's preference. The Traffic Event "Active" function may be controlled by an independent switch or incorporated into an existing switch. Generally, the Pulselite is controlled by a three position, PULSE-OFF-ACTIVE, Pulselite switch. This "Active" function may be incorporated into another systems control switch such as the aircrafts Strobe light as the function and limitations are similar.

2.1.7 Retractable Lights

If pulsing gear mounted or other retractable lights, additional circuitry may be required to prevent lights from being pulsed when the gear is retracted or the lamp is in an enclosed compartment. Care must also be exercised to prevent the extend/retract motors from being pulsed.

2.1.8 Determine Electrical Loads

After the Pulselite Control Unit has been properly mounted, determine the lighting pulse mode. Find the total wattage of the lamp(s) to be connected to the Pulselite Control Unit. Divide the highest total wattage by the voltage. The result will be the highest amperage rating on the Pulselite Control Unit. Loads should not exceed:

Table 4 -Max Power Rate for Pulselite Models 3060 Series

Pulselite Model	Per Channel Power Rating
3060	300W
3060-A	500W (13A maximum)
3060-S	500W

2.1.9 Determine the Amperage on individual Channels

Proper wire and circuit protection must be observed. See Table 5.

Table 5 - Circuit Protection

CU Wire AN Gauge	Circuit Breaker	Fuse
22	5 A	5 A
20	7.5 A	5 A
18	10 A	10 A
16	15 A	10 A
14	20 A	15 A

Approved wire specification is MIL-W- 22759/16 or better. Fuse specification is MIL-F-15160 or better. Circuit breaker specification is MIL-C-5809 or better.

To protect the Pulselite control unit and insure proper installation, it is important to check that ground terminal Pin 2, of the control unit is properly grounded to the aircraft frame with a No. 20 gauge wire or equivalent ground strap. Chassis of unit should be mounted to airframe and interfaces burnished to ensure a good ground. The resistance of each connection to ground should not exceed 0.0025Ω per FAA AC43.13.

Power input for the Pulselite Control Unit is through Pin 1. One 1 to 5 Amp circuit breaker is required between the aircraft bus and this pin. (Actual Control current used by the Pulselite is approximately 10mA.) This pin provides internal control voltage for the Pulselite Control Unit. Use at least 22-gauge wire for these circuits.

The Pulselite circuit breaker(s) should be located in the existing aircraft circuit breaker panel. However, if this is not possible, they may be located within the Pulselite switch panel.

2.2 CONTROL UNIT INSTALLATION

Listed below are considerations to be examined before installing the Pulselite 3060 Series. Close attention to these suggestions will assure optimum performance when completed.

TOOLS REQUIRED		
Abrasive Pad	Deburring Tool	Double Back Tape
Drill, 0.190 Dia	Aircraft Maintenance/Service Manual	-

PARTS REQUIRED			
Part Number	**Qty**	**Description**	**PFI Code Number**
Model 3060 Series	1	Model 3060 Series Pulselite Control Unit	-
MS20365-832A[1]	4	Locknut, 8-32 (Supplied by Customer)	-
AN525-8R7[1]	4	Screw, 8-32 (Supplied by Customer)	-
AN960-8L[1]	2	Washer, #8 (Supplied by Customer)	-

Note: 1. Length may vary, lock washer with a standard nut may be used in place of the locknut, regular thickness washers may be used. These are recommended hardware suggestions; alternate hardware may require additional verification that the structural installation is acceptable to be accomplished by the installer.

2.2.1 Mechanical Installation – Pulselite Control Unit

1. Remove all electrical power and ensure aircraft is electrically safe.
2. Select a location for the Pulselite Control Unit, which is suitably ventilated for avionics. Locate Pulselite away from fire hazard zones, highly explosive or corrosive areas, potentially hazardous fluid areas; e.g. water, fuel, hydraulic fluid, or oxygen units, etc.

NOTE

Check AML and STC Engineering Drawing list of installation drawings as these have approved installation locations and wiring diagrams for the applicable STC. Physical installations of the Pulselite Control Units supplied on these drawings are approved locations.

NOTE

It is the installer's responsibility to verify that the installation of the Pulselite Control system will not interfere with any existing modification on the aircraft prior to starting the installation. Contact Precise Flight if there appears to be an installation conflict. If an alternate installation is used, it is the responsibility of the installed to obtain the required approvals for the installation.

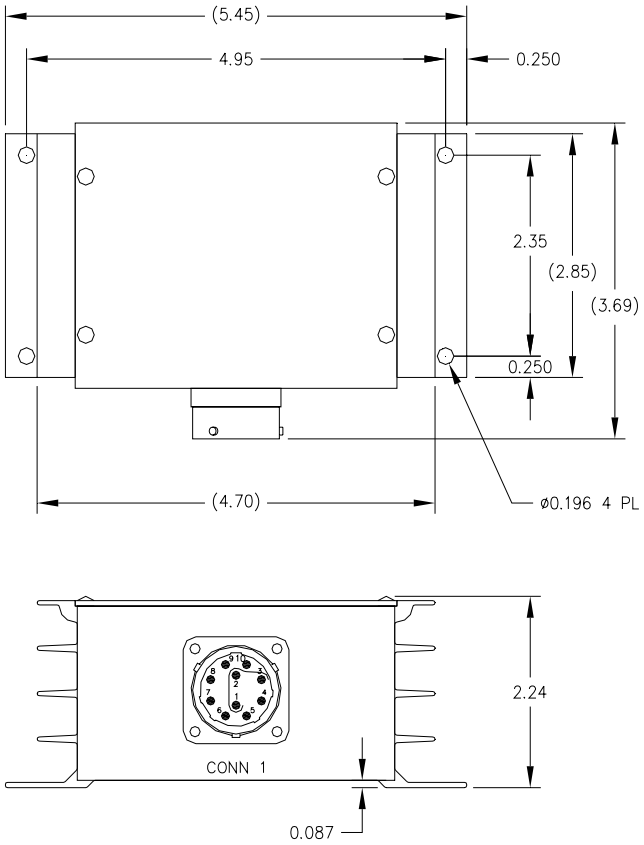


Figure 3 - Model 3060 Series Pulselite Physical Dimensions (Connector varies by models)

3. The Pulselite Control Unit must be installed in a structurally substantiated location. If installation drawings are not available for your aircraft, a typical Physical installation is provided in this section. If using the typical installation, additional structural approval for the mounting of the Pulselite Control unit is required to be performed by the installer.
4. Allow adequate space for installation of cables and connectors.
5. The Pulselite Control Unit should be installed in an avionics bay or other suitable location.

!! WARNING !!
Installation must be in a suitable and safe location, if located inside the passenger compartment(s), the installation must fulfill the applicable loads for crash/emergency landing conditions for items of mass inside the passenger compartment.

6. Although the Pulselite Control Unit can be installed in any axis, the preferred orientation is with the fins vertical. Use four 8-32-pan head screws. PFI recommends using AN525-8R7 Screws, AN960-8L washers, and MS20365-832A Nylock Nuts.

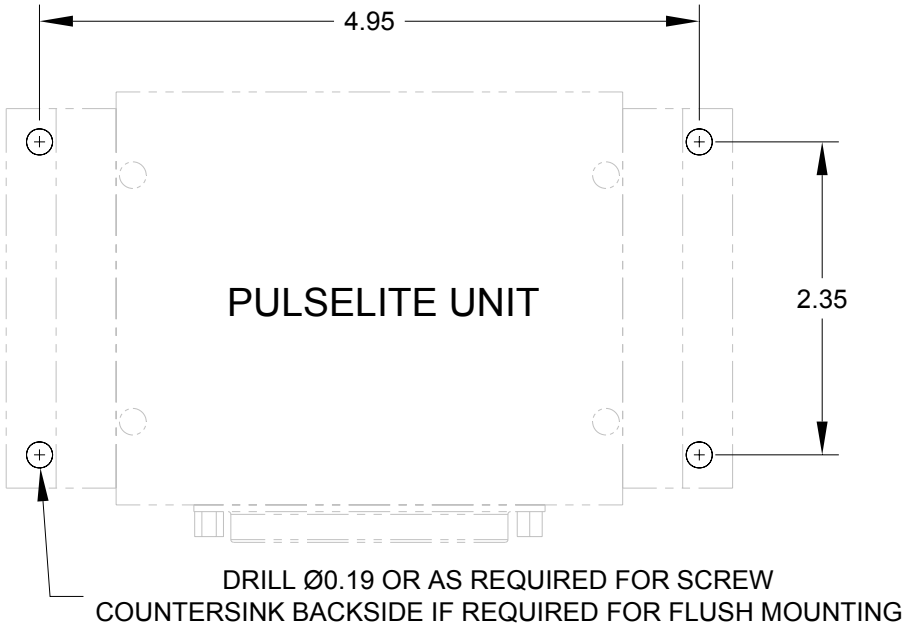


Figure 4 - Typical Hole Pattern for Pulselite 3060 Series Installation

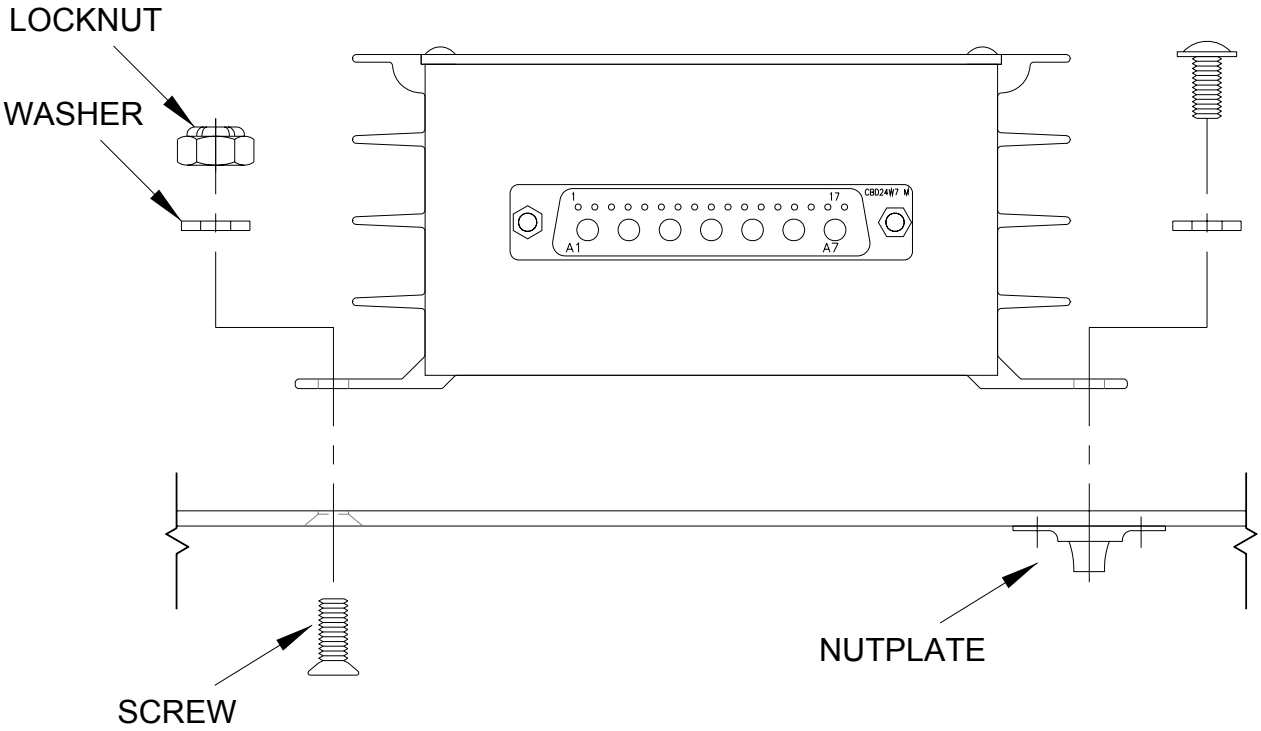


Figure 5 - Typical Physical Mounting options for Pulselite Model 3060 Series

7. Burnish one attachment hole on mounting structure and on the Pulselite Control Unit to ensure a proper ground. (See Figure 6)

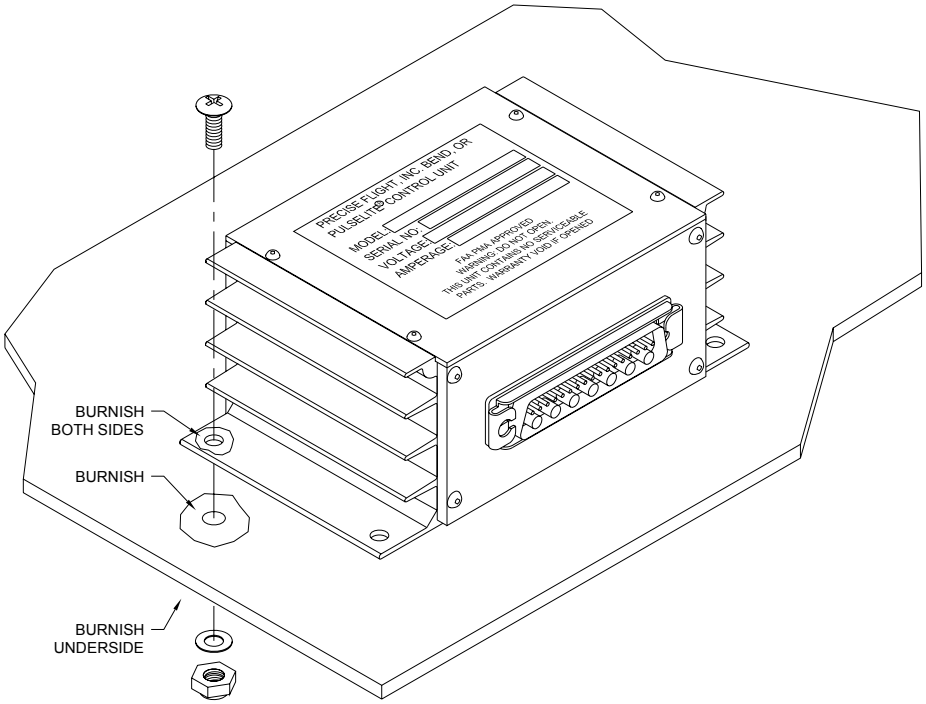


Figure 6 – Typical Burnished Hole Mounting for Pulselite Model 3060 Series

NOTE
Refer to Figure 7 if mounting on a non-conductive panel, or if required resistance is not achievable in location noted via the Burnished Hole.

Check for adequate ground bonding. Resistance between the Pulselite Control Unit and the airframe should not exceed 0.0025Ω per FAA AC43.13.

2.2 Mechanical Installation – Switches and Circuit Breaker

TOOLS REQUIRED		
Lacing Cord	Screwdriver A/R	-
Wire Crimper, Cutter & Stripper	Wrench A/R	Aircraft Maintenance/Service Manual

PARTS REQUIRED				
Part Number	**Qty**	**Description**	**PFI Code Number**	**Boeing Alternate**
MS26574-X	1	Circuit Breaker, 1-5A (Customer Supplied)	-	-
M7928/4-x	A/R	Ring Terminal (Lug) 14-16 Wire (Customer Supplied)	-	-

2.2.1 Control Power Switch

1. The switch(s) should be located near the existing Aircraft Light switches.
2. Individual lights can be controlled by grounding the appropriate pin on the Pulselite unit, See system diagrams in Section 2.3.
3. Placard, or permanently mark, the applicable switch as indicated on the applicable schematic for the installation used.

2.2.2 Control Power Circuit Breaker

1. Reference applicable wiring schematic or installation drawing.
2. Install a new circuit breaker in available position. The Pulselite circuit breaker(s) should be located in the existing aircraft circuit breaker panel. However, if this is not possible, they may be located within the Pulselite switch panel.
3. Install “PULSELITE” or “PULSE” placard next to new circuit breaker to clearly identify the function of the CB.

2.3 PULSELITE WIRING INSTALLATION

All wiring should be secured to prevent chafing and faulty connections. Refer to Advisory Circular 43.13-2A (or later revision.)

TOOLS REQUIRED		
Lacing Cord	Screwdriver Philips	Screwdriver Straight
Aircraft Maintenance/Service Manual	-	Wire Crimper, Cutter & Stripper

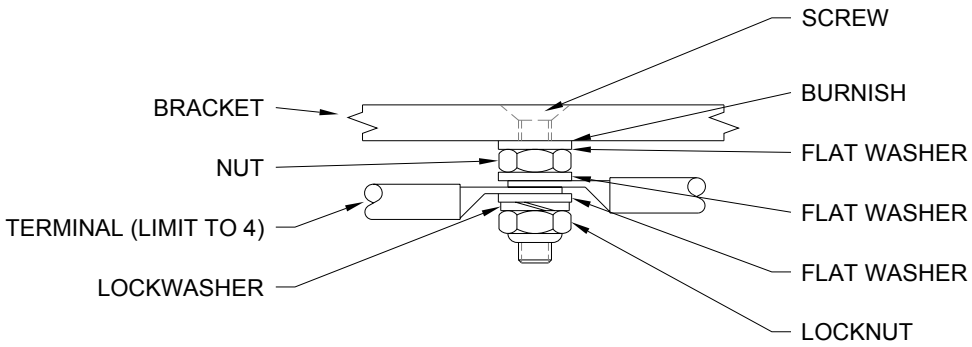
PARTS REQUIRED				
Part Number	**Qty**	**Description**	**PFI Code Number**	**Boeing Alternate**
-	A/R	Connectors (Supplied by Installer, Size as required)		
MIL-W-22759/16	A/R	Wire (Supplied by Installer, Size as required)	-	-

!! WARNING !!
Do not use Aluminum Wire.

NOTE
Wiring Precautions.

- PFI recommends using MIL-W-22759/16 wire, shielded/high temperature wire is also recommended.
- Observe proper cable routing, i.e. avoid tie-wrap joining power lines to antenna leads, intercom, or radio leads.
- Be sure that all connections are sound, i.e. avoid frayed or split conduit ends.
- Avoid sharp bends or undue strain on cables.

1. Reference PFI Installation Drawings or the Installation Schematics supplied in this document.
2. Recommended wire specification is MIL-W- 22759/16 or better.
3. To protect the Pulselite control unit and insure proper installation, it is important to check that ground terminal Pin 2, of the control unit is properly grounded to the aircraft frame with a No. 20 gauge wire or equivalent ground strap. Chassis of unit should be mounted to airframe and interfaces burnished to ensure a good ground. Figure 7 shows a typical ground stud detail if the installation is unable to provide an adequate ground through the physical installation of the Pulselite Control Unit. AC43.13 also provides instructions for ground stud installations.



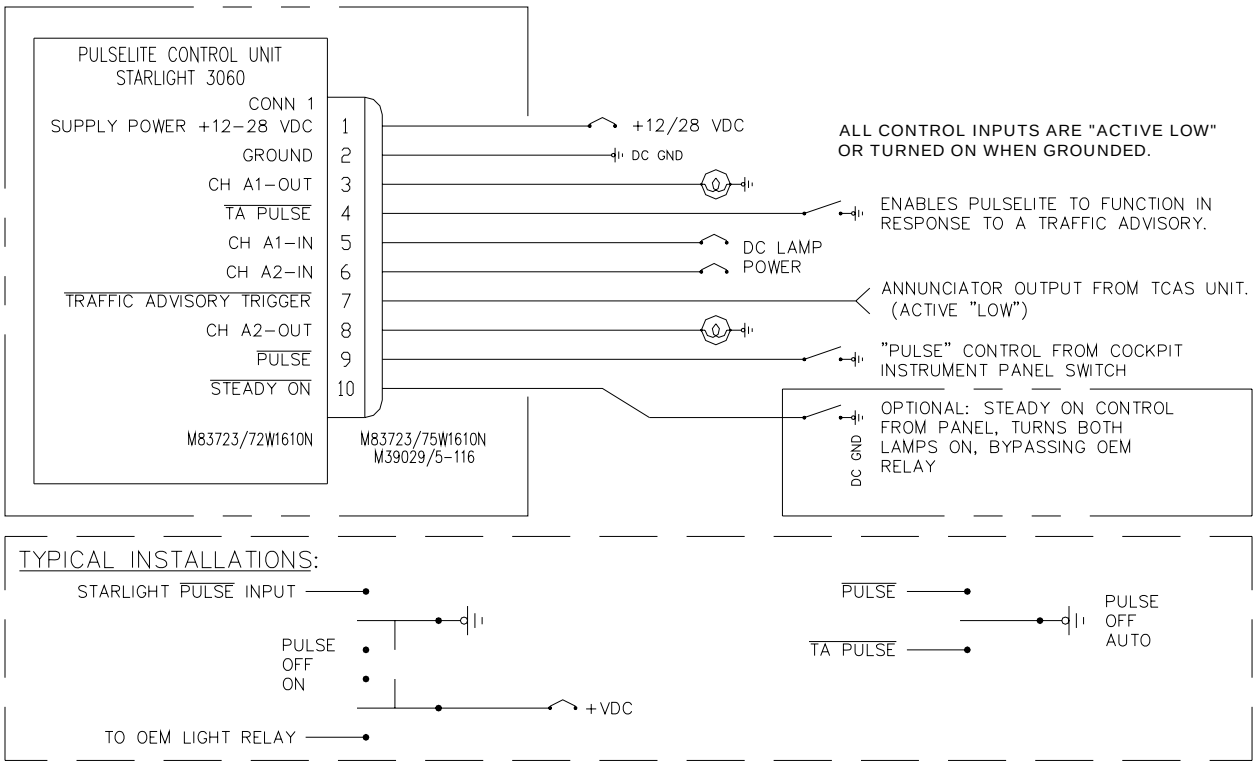
GROUND STUD DETAIL

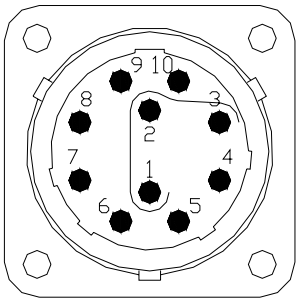
Figure 7 - Alternate Grounding through Ground Stud

4. Power input for the Pulselite Control Unit is through Pin 1. One 1 to 5 Amp circuit breaker is required between the aircraft bus and this pin. (Actual Control current used by the Pulselite is approximately 10mA.) This pin provides internal control voltage for the Pulselite Control Unit. Use at least 22-gauge wire for these circuits.

2.3.1 Model 3060 Generic System Diagram

This section provides a generic system wiring diagram for aircraft which a specific installation diagram is not offered. Complying with this installation complies with the applicable regulations provided the requirements of this manual are followed.





Front face of Pin insert of rear face of Socket insert.

Amphenol MIL-C-83723 Series III connector:
Flange mount Receptacle: M83723/72W1610N.
Contacts: 10 x #16 Standard Test Current 13.0 A.
Pins: M39029/4-111 (M83723-33B16)
ID Color bands: BR BR BR (wire end)

Mates with Bayonet Plug M83723/75W1610N.
Sockets: M39029/5-116 (M83723-34B16)
ID Color bands: BR BR BL (wire end)
Seal plugs: MS27488-16
Use 16-20 AWG Wire.

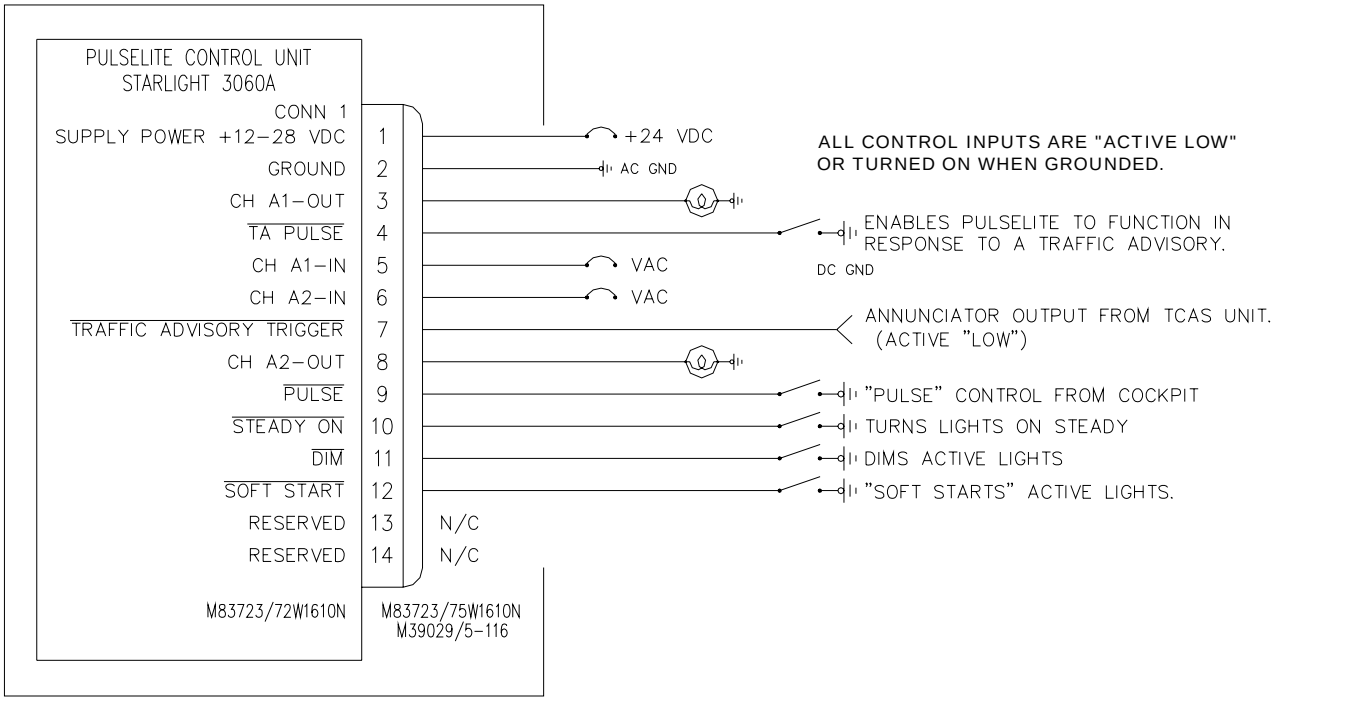
Figure 8 -Pulselite Model 3060 System Diagram

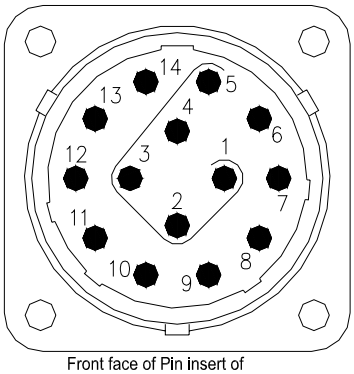
Table 6 - Model 3060 Connector Pinout Table

Pulselite Control Unit Model 3060 Connector Shell Size 16 M83723/72W1610N		
Pin	**Voltage**	**Function**
1	12 - 28 V	Supply Power
2	DC GND	Unit Ground
3	12 - 28 V	DC Output - A1
4	DC GND	Traffic Input Control
5	12 - 28 V	DC Input - A1
6	12 - 28 V	DC Input - A2
7	DC GND	Traffic Advisory Trigger
8	12 - 28 V	DC Output - A2
9	DC GND	Pulse Control
10	DC GND	Steady On
Mating Connector M83727/75W1610N		

2.3.2 Model 3060-A Generic System Diagram

This section provides a generic system wiring diagram for aircraft which a specific installation diagram is not offered. Complying with this installation complies with the applicable regulations provided the requirements of this manual are followed.





Front face of Pin insert of
rear face of Socket insert.

Amphenol MIL-C-83723 Series III connector:
Flange mount Receptacle: M83723/72W1814N.
Contacts: 14 x #16 Standard Test Current 13.0 A.
Pins: M39029/4-111 (M83723-33B16)
ID Color bands: BR BR BR (wire end)

Mates with Bayonet Plug M83723/75W1814N.
Sockets: M39029/5-116 (M83723-34B16)
ID Color bands: BR BR BL (wire end)
Seal plugs: MS27488-16
Use 16-20 AWG Wire.

Figure 9 - Pulselite Model 3060-A System Diagram

Table 7 - Model 3060-A Connector Pinout Table

Pulselite Control Unit Model 3060-A Connector Shell Size 16 M83723/72W1814N		
Pin	**Voltage**	**Function**
1	12 - 28 VDC	Supply Power
2	DC GND	Unit Ground
3	28 - 115 VAC	AC Output - A1
4	DC GND	Traffic Input Control
5	28 - 115 VAC	AC Input - A1
6	28 - 115 VAC	AC Input - A2
7	DC GND	Traffic Advisory Trigger
8	28 - 115 VAC	AC Output - A2
9	DC GND	Pulse Control
10	DC GND	Steady On
11	DC GND	Dim
12	DC GND	Soft Start
13	N/A	Reserved (No Connect)
14	N/A	Reserved (No Connect)
Mating Connector M83727/75W1814N		

2.3.3 Model 3060-S Generic System Diagram

This section provides a generic system wiring diagram for aircraft which a specific installation diagram is not offered. Complying with this installation complies with the applicable regulations provided the requirements of this manual are followed.

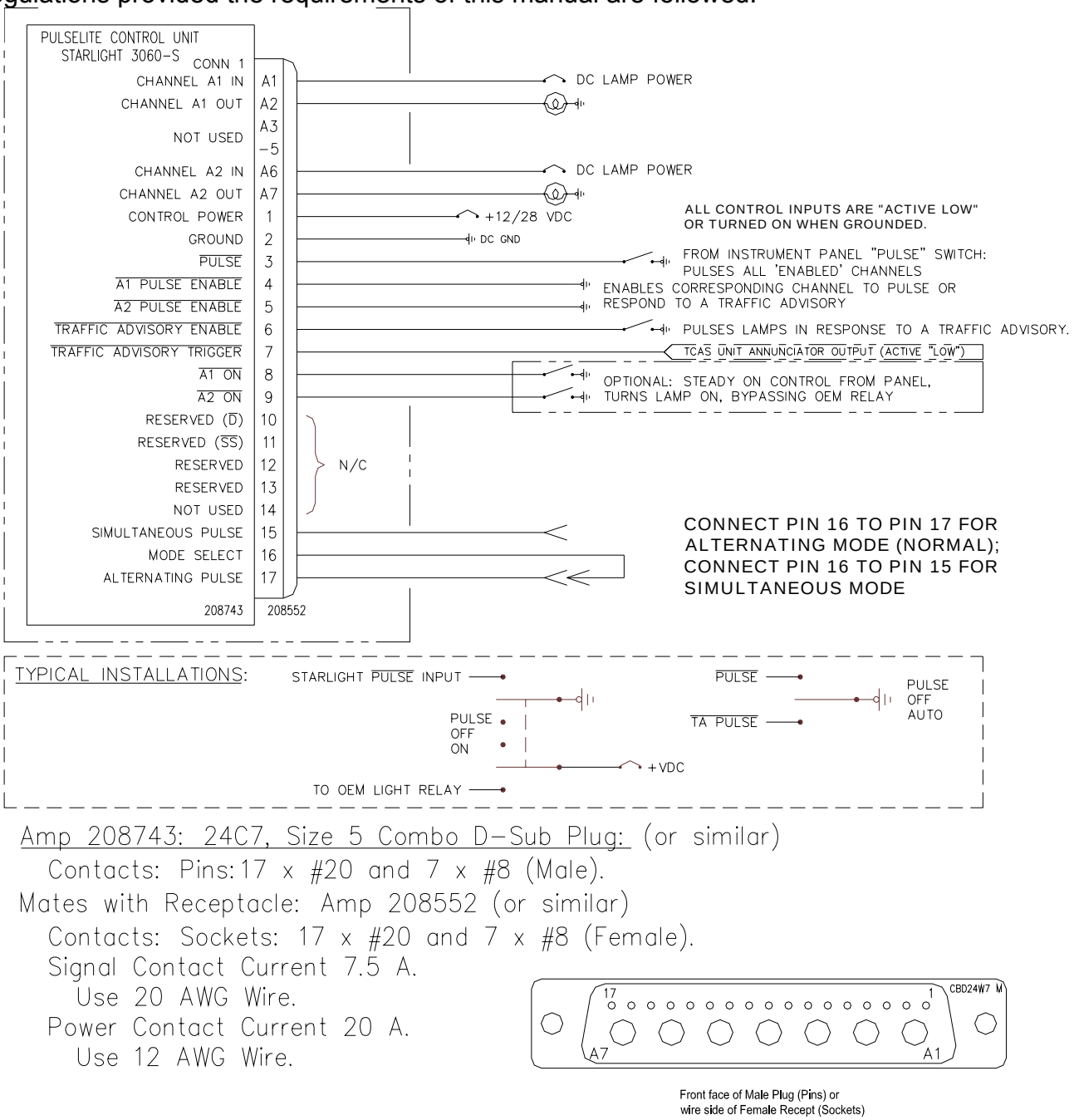


Figure 10 -Pulselite Model 3060-S System Diagram

Table 8 - Model 3060-S Connector Pinout Table

Pulselite Control Unit Model 3060-S Connector – Combo D-Sub AMP 208743		
Pin	**Voltage**	**Function**
1	12 - 28 V	Supply Power
2	DC GND	Unit Ground
3	DC GND	Pulse Control
4	DC GND	A1 Pulse
5	DC GND	A2 Pulse
6	DC GND	Traffic Input Control
7	DC GND	Traffic Advisory Trigger
8	DC GND	A1 On
9	DC GND	A2 On
10	N/A	Reserved (No Connect)
11	N/A	Reserved (No Connect)
12	N/A	Reserved (No Connect)
13	N/A	Reserved (No Connect)
14	N/A	(No Connect)
15	Signal	Simultaneous Mode
16	Signal	Mode Select
17	Signal	Alternate Mode
A1	12 - 28 V	DC Input - A1
A2	12 - 28 V	DC Output - A1
A3-A5	N/A	(No Connect)
A6	12 - 28 V	DC Input - A2
A7	12 - 28 V	DC Output - A2
Mating Connector AMP 208552		

The 3060-S D-Sub connector uses a slide-lock to secure the connector to the Pulselite control unit as shown in Figure 11.

CONNECTOR SLIDE-LOCK INSTALLATION

ASSEMBLE CONNECTOR BACKSHELL & LOCK KIT AS SHOWN

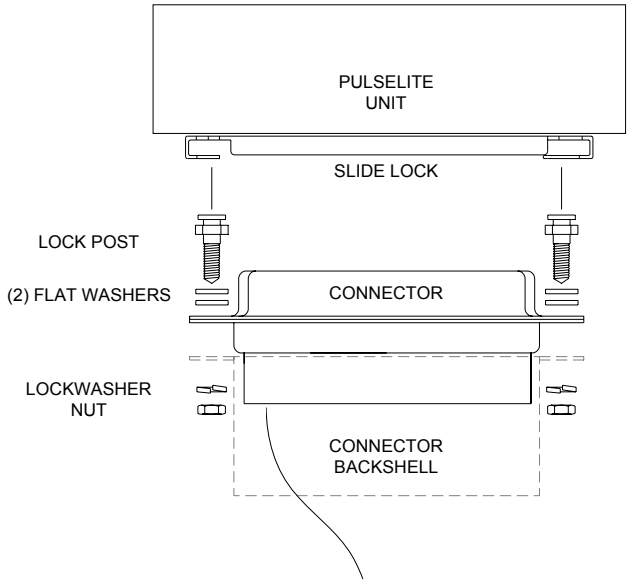
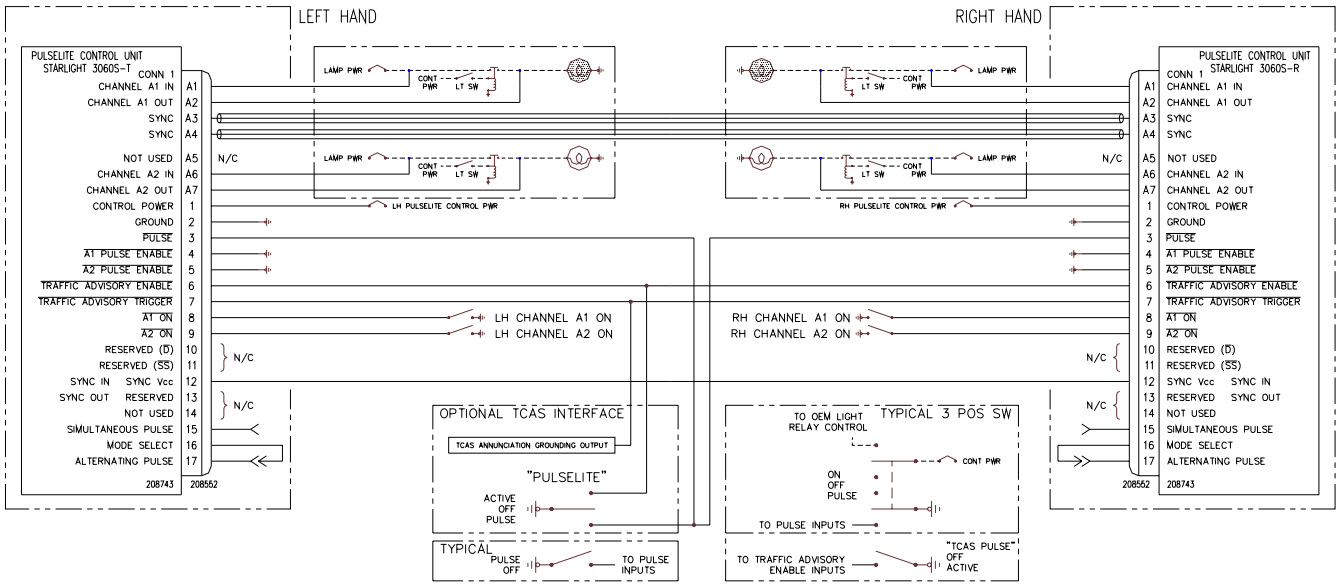


Figure 11 - 3060-S Connector Slide-Lock Installation

2.3.4 Model 3060-S T / R (Synced DC Units) System Diagram

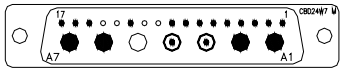
This section provides a generic system wiring diagram for aircraft which a specific installation diagram is not offered. Complying with this installation complies with the applicable regulations provided the requirements of this manual are followed.



PULSELITE UNIT: Amp 208743: 24C7, Size 5 Combo D-Sub Plug: (or similar)
Contacts: Pins: 17 x #20 and 7 x #8 (Male).

AIRCRAFT HARNESS: Mates with Receptacle: Amp 208552 (or similar)
Contacts: Sockets: 17 x #20 and 7 x #8 (Female).

Signal Contact Current 7.5 A.
Use 20 AWG Wire.
Power Contact Current 20 A.
Use 12 AWG Wire.



Front face of Male Plug (Pins) or
wire side of Female Recept (Sockets)

Figure 12 -Pulselite Model 3060-S Synced System Diagram

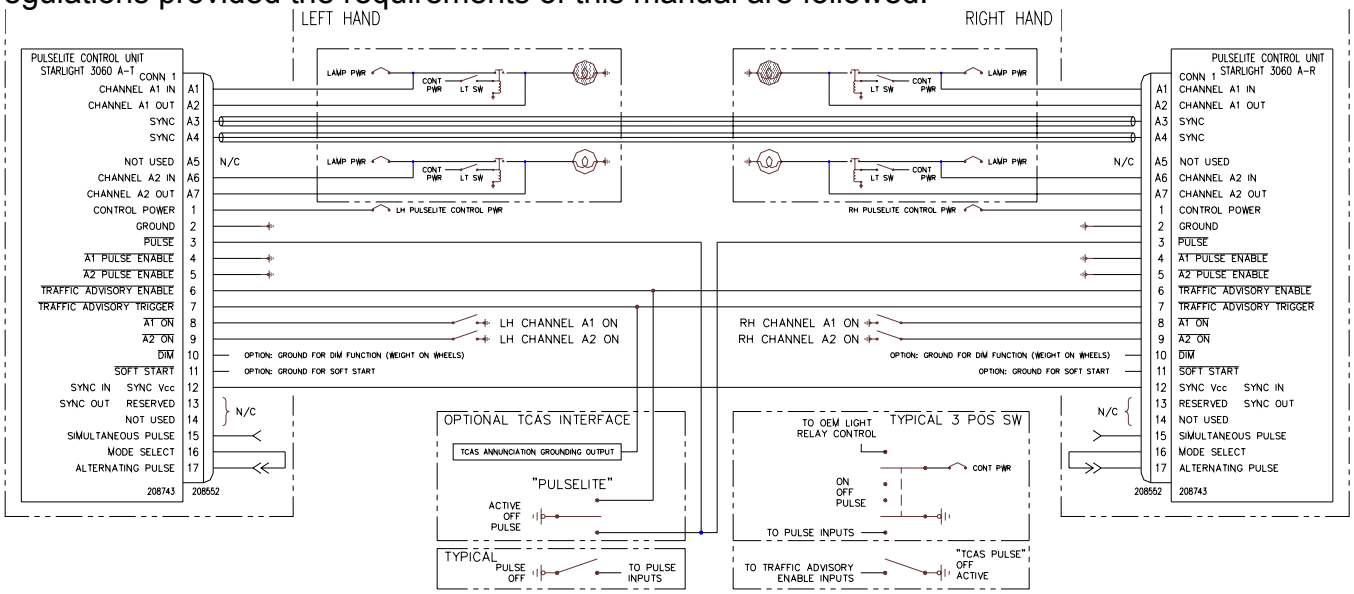
The 3060-S D-Sub connector uses a slide-lock to secure the connector to the Pulselite control unit as shown in Figure 11.

Table 9 - Model 3060-S T/R (DC Sync) Connector Pinout Table

Pulselite Control Unit Model 3060-S Connector – Combo D-Sub AMP 208743		
Pin	**Voltage**	**Function**
1	12 - 28 V	Supply Power
2	DC GND	Unit Ground
3	DC GND	Pulse Control
4	DC GND	A1 Pulse
5	DC GND	A2 Pulse
6	DC GND	Traffic Input Control
7	DC GND	Traffic Advisory Trigger
8	DC GND	A1 On
9	DC GND	A2 On
10	N/A	Reserved (No Connect)
11	N/A	Reserved (No Connect)
12	5 VDC	Sync Power
13	N/A	Reserved (No Connect)
14	N/A	(No Connect)
15	Signal	Simultaneous Mode
16	Signal	Mode Select
17	Signal	Alternate Mode
A1	12 - 28 V	DC Input - A1
A2	12 - 28 V	DC Output - A1
A3	Signal	Sync (Coaxial Contact)
A4	Signal	Sync (Coaxial Contact)
A5	N/A	(No Connect)
A6	12 - 28 V	DC Input - A2
A7	12 - 28 V	DC Output - A2
Mating Connector AMP 208552		

2.3.5 Model 3060-A T / R (Synced AC Units) System Diagram

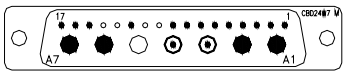
This section provides a generic system wiring diagram for aircraft which a specific installation diagram is not offered. Complying with this installation complies with the applicable regulations provided the requirements of this manual are followed.



PULSELITE UNIT: Amp 208743: 24C7, Size 5 Combo D-Sub Plug: (or similar)
Contacts: Pins:17 x #20 and 7 x #8 (Male).

AIRCRAFT HARNESS: Mates with Receptacle: Amp 208552 (or similar)
Contacts: Sockets: 17 x #20 and 7 x #8 (Female).

Signal Contact Current 7.5 A.
Use 20 AWG Wire.
Power Contact Current 20 A.
Use 12 AWG Wire.



Front face of Male Plug (Pins) or
wire side of Female Recept (Sockets)

Figure 13 -Pulselite Model 3060-A Synced System Diagram

The 3060-S D-Sub connector uses a slide-lock to secure the connector to the Pulselite control unit as shown in Figure 11.

Table 10 - Model 3060-A T/R (AC Sync) Connector Pinout Table

Pulselite Control Unit Model 3060-A Connector – Combo D-Sub AMP 208743		
Pin	**Voltage**	**Function**
1	12 - 28 VDC	SUPPLY POWER
2	DC GND	UNIT GROUND
3	DC GND	PULSE CONTROL
4	DC GND	A1 PULSE
5	DC GND	A2 PULSE
6	DC GND	TRAFFIC INPUT CONTROL
7	DC GND	TRAFFIC ADVISORY TRIGGER
8	DC GND	A1 ON
9	DC GND	A2 ON
10	DC GND	Dim
11	DC GND	Soft Start
12	5 V DC	Sync Power
13	N/A	Reserved (No Connect)
14	N/A	Reserved (No Connect)
15	Signal	Simultaneous Mode
16	Signal	Mode Select
17	Signal	Alternate Mode
A1	28 - 115 VAC	AC Input - A1
A2	28 - 115 VAC	AC Output - A1
A3	Signal	Sync (Coaxial Contact)
A4	Signal	Sync (Coaxial Contact)
A5	N/A	(No Connect)
A6	28 - 115 VAC	AC Input - A2
A7	28 - 115 VAC	AC Output - A2
Mating Connector AMP 208552		

2.6 (OPTIONAL) – TCAS PROCESSOR WIRING OPTION

TOOLS REQUIRED		
Lacing Cord	Screwdriver	Wire Crimper, Cutter & Stripper
Aircraft Maintenance/Service Manual	TCAS/TCAD Service Manual	-

PARTS REQUIRED				
Part Number	**Qty**	**Description**	**PFI Code Number**	**Boeing Alternate**
MIL-W- 22759/16	A/R	Wire (Supplied by Installer, Size as required)	-	-
-	A/R	Connectors (Supplied by Installer, Size as required)	-	-

The Pulselite unit may be wired to automatically initiate lamp pulsing in response to a TCAS / TCAD Traffic Advisory with no additional action required of the pilot. This "Traffic Event" pulsing option will require an additional control switch input from the Pulselite switch, a separate "Active" pulse switch or tied into an existing control such as the Strobe switch. A ground on the Pulselite units "Traffic Advisory Enable" input will arm the system for automatic lamp pulsing. The automatic pulse action must be disabled when it is not desirable to pulse the exterior lighting such as in IMC conditions.

The Pulselite will interface to the aircrafts existing TCAS or TCAD unit utilizing the discrete annunciator output(s) available on most TCAS equipment. Consult the TCAS/TCAD documentation for information regarding the annunciator outputs. Generally these outputs, including a "Proximate Advisory", a "Traffic Advisory", and a "Resolution Advisory" are an active ground. That is, they supply a ground to an annunciator lamp connected to the aircraft bus. The Proximate and Traffic Advisory outputs or all three may wired together and connected to the "Traffic Advisory Trigger" input of the Pulselite unit. If these annunciator outputs are used by other equipment, they may be diode isolated from the Pulselites input. Most TCAS equipments annunciator outputs are capable of driving incandescent lamps requiring hundreds of milliamps while the load presented to the annunciator output by the Pulselite unit is negligible at only a few micro amps. Only discrete outputs may be utilized. The Pulselite unit cannot decode serial data nor connect to a speaker output as used on some Skywatch® equipment without additional interfacing.

1. Reference applicable Schematic, or installation drawings.

> ! **CAUTION** !
> *It is the responsibility of the installer to verify that this installation does not interfere with other installations if the annunciator outputs are wired to any other components, or are used for pilot/crew annunciation with separate Corrective, Preventative, or Traffic TCAS advisories. Additional installation specific approval may be required if this installation*

2. Approved wire specification is MIL-W- 22759/16 or equivalent.
3. Install "ACTIVE" placard as indicated next to the switch per the applicable schematic or drawing.

2.7 SYSTEM INSTALLATION FUNCTIONAL CHECK OUT

TOOLS / MATERIALS REQUIRED		
Volt-Ohmmeter	Screwdriver Philips #2	Aircraft Maintenance/Service Manual.

2.7.1 Installation Check Out

1. Reference applicable schematics, and or installation drawings used for installation.
2. Ring out wiring per the wiring diagrams.
3. Check wiring and Connection prior to applying power.
4. Close Aircraft circuit breaker panels.
5. Attach Connector to the Pulselite Unit.

2.7.2 Testing Conditions (Functional Testing and EMI/RFI Testing)

1. The Stand-by magnet compass test will require a clear area to turn the aircraft and will require a tug or aircraft power to rotate.
2. (If Weather Radar is Installed on the Aircraft) The weather radar check will require suitable clear area since the radar will be operated as part of the test.
3. Many of the RFI / EMI tests require the observation of system indicators while turning the Pulselite system ON and OFF. These can be performed during an already planned engine run and control surface check, if applicable.
4. If Weather Radar is installed, this test requires HF transmission.

NOTE

- The Landing Lights generate significant heat; take all necessary precautions to safeguard personnel and equipment.
- Due to the heat generated, still-air (Ground) operation of the pulsing landing lights should be kept to a minimum, with a maximum continuous testing period of approximately 15 minutes. Allow a minimum of 15 minutes cool-down after extended operation.
- Continuous lengthy operation may cause a hazing of the lens and premature failure of the globe.

2.7.3 Functional Testing

1. Turn on Aircraft Power.
2. Functional test Pulselite system and landing light system with this Installation Manual and Precise Flight Pulselite Flight Manual Supplement.
3. Light Checkout Procedure:
   a) Switch the Pulselite Unit to ON and verify that the appropriate Landing / Taxi / Recognition / Hover Lights are flashing on the aircraft.
   b) Switch the appropriate Landing / Taxi / Recognition / Hover Lights ON utilizing the existing switches and verify that the lights remain on without flashing.
4. (If Option Installed) TCAS Checkout Procedure:
   a) Place the switches for the lights attached to the Pulselite system in the OFF position.
   b) Place the STROBE switch in the (ACTIVE) position.
   c) Simulate a TCAS traffic situation on the aircraft TCAS system or ring out wiring between the TCAS processor and the Pulselite. Observe that the Left and Right lights are flashing alternately during the simulated “Traffic Event.”
5. Switch the Pulselite Control Unit off and the existing Landing/ Taxi / Recognition / Hover Light switches are off and verify that the Landing/ Taxi/ Recognition / Hover Lights are OFF.

2.7.4 EMI / RFI TESTING

2.7.4.1 General

The following is an outline for determining that no detrimental Electro Magnetic Interference (EMI) or Radio Frequency Interference (RFI) is caused by the installation of a Precise Flight Pulselite product per FAR §23.1431, §25.1431, §27.1431, or §29.1431.

These procedures are not necessarily all encompassing in that they may not include all of the equipment installed in the airplane. If electronic and navigation equipment is installed which is not included in this document, consult the equipment manufacturer, an FAA approved repair station rated in the equipment involved ,or an FAA Avionics Inspector for applicable test procedures.

The evaluation will be with a series of equipment checks, on the ground, to determine that no detrimental EMI/RFI effects are introduced into the aircraft by the Pulselite system.

The electrical systems installed in the aircraft will be referred to as the Pulselite system in this procedure.

The following tests should be performed by personnel familiar with aircraft systems and proper operation as well as the Pulselite equipment and its proper operation.

Any and all discrepancies shall be noted. Any discrepancies noted during these procedures must be reported to Precise Flight, Inc. and evaluated for cause, extent and as to what corrective action should be taken to correct the problem. The aircraft may not be flown after discrepancies are found unless the Pulselite system is disconnected at the aircraft bus until such time as the problems have been corrected and the aircraft has successfully passed the ground portion of this test. Only then may the aircraft be flown to complete this test.

A record of this test shall be recorded in the aircraft logbook. The entry should include date, aircraft time, and results including any discrepancies note. The ground test results shall be recorded in the permanent aircraft records by the installing mechanic or a mechanic with the proper ratings.

2.7.4.2 Procedures

During the following tests, the aircraft shall be supplied with adequate aircraft power at or above the minimum bus voltage for the aircraft. The airplane should be located for proper radio reception and radar operation, usually outside.

2.7.4.3 Communications EMI/RFI Tests

1. Select COMM. 1 to a local frequency in the lower end of the COMM frequency band. Check for clarity of reception and background noise with all Pulselite equipment operating. Repeat for all COMM. radios.

   Remarks: _____

2. Select COMM. 1 to a local frequency in the upper end of the COMM frequency band. Check for clarity of reception and background noise with all Pulselite equipment operating. Repeat for all COMM. radios.

   Remarks: _____

3. Repeat COMM. testing for all COMM. radios.

   Remarks: _____

4. Verify that the intercom is free from noise and interference caused by the Pulselite installation, and with the Pulselite system ON and OFF.

   Remarks: _____

2.7.4.4 Ground Navigation Systems EMI/RFI Tests

1. VOR/DME
    a. Select VOR 1 receiver to a local frequency, center CDI needle of HSI with "TO" indication. Listen for background noise.
    b. Switch Pulselite equipment on and off, check for interference and needle deviation.
    c. Repeat for all other VHF NAV radios.
    d. Tune VOR Nav 1 to a local VORTAC station with Pulselite equipment off. Note distance on DME and listen for noise. Turn Pulselite equipment on and compare distance readings and background noise.
    e. Repeat for all other VHF NAV radios.

    Remarks: _____
2. Loran C / GPS
    a. Observe Loran/GPS self test responses and signal to noise ratios. Turn Pulselite equipment on and recycle Loran/GPS and compare results.

    Remarks: _____
3. RNAV
    a. VOR MODE - Set to VHF on a local frequency, center CDI and pilots HSI, turn on Pulselite equipment and check for interference.

    Remarks: _____

    b. DME MODE - With Pulselite equipment off, set to local VHF frequency and note DME reading. Turn on Pulselite equipment and compare DME reading. Verify reading with known distance.

    Remarks: _____

    c. RNAV MODE - With Pulselite equipment off, set local VHF frequency, set waypoint bearing to 180 and waypoint distance to 25 miles. Center CDI and note RNAV readings. Turn Pulselite equipment on and note any changes in RNAV readings.

    Remarks: _____

2.7.4.5 Magnetic Compass EMI/RFI Tests

With Pulselite equipment OFF, note compass heading. Turn Pulselite equipment ON and compare compass heading.

NOTE
This test must be repeated with the aircraft headed in four (4) directions approximately 90° apart. PFI recommends performing a whole compass swing on the aircraft with the Pulselite System ON and OFF.

Compass Readings				
Heading	**Position 1**	**Position 2**	**Position 3**	**Position 4**
Pulselite ON				
Pulselite OFF				

Remarks: _____

2.7.4.6 Weather Radar

!! WARNING !!
When Operating Radar, Caution must be used! Follow radar, and or aircraft, manufacturers recommendations for safety, especially during ground testing.

Select "WxRadar ON". After proper warm up time, select "TEST" mode and confirm proper operation. Select "MAP" mode and note display. Turn on Pulselite equipment and note any changes.

Remarks: _____

2.7.4.7 Autopilot and Flight Director

Turn on autopilot and perform ground check per the autopilot manufacturer's instructions in the flight manual. Turn on the Pulselite equipment and again perform check. Note any discrepancies.

Remarks: _____

2.7.4.8 Miscellaneous Equipment Check

Verify operation of other electronic equipment used for flight with the Pulselite System ON and OFF and note any discrepancies.

2.7.4.9 Conclusion

Complete this section following EMI testing and keep with aircraft records. A note of EMI/RFI testing should be inserted in applicable aircraft maintenance documents.

EMI/RFI Test Data Record		
Date of Test:		
Make:		
Model:		
Ser. No:		
Registration No:		
Witness:		**Date:**
Location:		

Test	Section	PASS	FAIL	Notes
Communications Checks				
COMM #1, Low Freq. Check	2.7.4.3 (1)			
COMM #1, High Freq. Check	2.7.4.3 (2)			
COMM #2, Low Freq. Check	2.7.4.3 (3)			
COMM #2, High Freq. Check	2.7.4.3 (3)			
COMM #3, Low Freq. Check	2.7.4.3 (3)			
COMM #3, High Freq. Check	2.7.4.3 (3)			
COMM #4, Low Freq. Check	2.7.4.3 (3)			
COMM #4, High Freq. Check	2.7.4.3 (3)			
Intercom Check	2.7.4.3 (4)			
Navigation Checks				
VOR/DME #1 Check	2.7.4.4 (1)			
VOR/DME #2 Check	2.7.4.4 (1)			
Loran C / GPS Check	2.7.4.4 (2)			
RNAV Check	2.7.4.4 (3)			
Magnetic Compass Check (Compass Swing)	2.7.4.5			
MISC Equipment Checks				
Weather Radar Check	2.7.4.6			
Autopilot and Flight Director Check	2.7.4.7			
	2.7.4.8			
	2.7.4.8			
	2.7.4.8			
	2.7.4.8			
	2.7.4.8			
OVERALL (All tests must pass)				

Comments:	
Testing Completed by:	Date:

2.8 DOCUMENTATION

Record installations, Functional Tests, and EMI/RFI tests in appropriate aircraft maintenance records and ensure Flight Manual Supplement is properly annotated in Aircraft Flight Manual

Before performing flight tests it is recommended you complete the calculations for weight and balance for 1 lb at the appropriate FS for the specific aircraft model and revise the equipment list showing installation of Precise Flight Pulselite® System. FAA Form 337, section 8 "Description of Work Accomplished".

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

A. The following components were installed:
PRECISE FLIGHT Pulselite® Model (3060, 3060-A, or 3060-S) System P/N_____ per STC # (insert applicable STC number here). Installation Kit Number _____.

B. Installed the Model (3060, 3060-A, or 3060-S) PULSELITE STARLIGHT in accordance with Precise Flight Inc Pulselite Installation Manual, Model 3060 Series document number 025PMAN0001 Revision ____ dated _____ and guidance in FAA Advisory Circulars 43.13-1B, chapter 11, and 43.13-2A, Chapter 1 & 2.

C. An electrical load analysis was performed and the revised continuous load of the aircraft electrical bus does not exceed 80% of capacity.

D. A complete operational test was performed according to the Precise Flight Inc. Pulselite Installation Manual, Model (3060, 3060-A, or 3060-S) document number 025PMAN0001 Revision ____ dated _____. The equipment performed satisfactorily and did not adversely affect existing components or systems in the aircraft, as required by FAR §23.1301, FAR §23.1431 (or FAR §25.1301, FAR §25.1431, or FAR §27.1301, FAR §27.1431, or FAR §29.1301, FAR §29.1431 as applicable.)

E. The aircraft equipment list was revised to reflect these changes; weight and balance data was revised and placed in the aircraft records. A Precise Flight Inc. Pulselite Aircraft Flight Manual Supplement dated _____ was placed in the aircraft.

Figure 14 – Suggested FAA Form 337 Description of Work Statment

- Add the FAA approved Flight Manual Supplement to the aircraft Flight manual.
- Keep all Precise Flight Pulselite papers with aircraft records.
- Fill out and return warranty card to Precise Flight Inc.

3.0 TROUBLE SHOOTING GUIDE

3.1 PULSELITE FAILS TO OPERATE

a. Check for proper steady state operation of the light(s).
b. Check Circuit Breakers.
c. Check Connectors Plugs for Security and Contact Insertion.
d. Check Wiring Diagram against Aircraft Installation.
e. Perform Installation Checkout per Section 2.7.1

3.2 ADDITIONAL TECHNICAL ASSISTANCE

Please call Precise Flight, Inc. Toll Free from inside the United States at 1-800-547-2558; or Internationally or Locally at 541-382-8684.

3.3 RETURN AUTHORIZATION

In order to expedite repair of units, call the factory for a return authorization number before returning equipment for service.

3.4 WARRANTY SERVICE

Precise Flight warrants products in accordance with the warranty statement in effect at the time of equipment registration. All repairs are performed at the factory. Contact Precise Flight Inc. for a warranty / return authorization. All requests for warranty payment must be submitted on a standard warranty claim form, accompanied by the dealer invoice. Authorized warranty work performed by the dealer will be limited to removal and re-installation of units on an exchange basis. Precise Flight Inc. will bear the cost of warranty returns both ways via **UPS** surface delivery only. Precise Flight reserves the right to use reconditioned parts in repairing the product or to use reconditioned units as warranty replacements.

Toll Free from inside the United States at 1-800-547-2558; or Internationally or Locally at 541-382-8684.

4.0 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Refer to Precise Flight Document 000PMAN0002, Instructions for Continued Airworthiness.