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Crouse-Hinds by Eaton
Airport Lighting Products
1200 Kennedy Road
Windsor, CT 06095

Instruction Manual

FAA L-804
LED

804E-AP1

Elevated Runway Guard Light

Instruction Manual

For Parts or Technical Service Call (860) 683-4300

1 Revisions

Revision Number	Issue/Reissue Letter Number	Description	Checked	Approved
A	A215-059	INITIAL ISSUE	KF	SD
B	A219-054	Page 15, figure 5: Added P/N 21696-3 OR 21696-4; Page 19, figure 7: Added P/N 21696-4 to power supply diagram.	KF	PG

2 Product Warranty

Warranty
Refer to Eaton's Crouse-Hinds Airport Lighting Products Terms and Conditions for product specific warranty information.

3 Warning Labels

DANGER

DANGER:

The hazard or unsafe practice will result in severe injury or death.

WARNING

WARNING:

The hazard or unsafe practice could result in severe injury or death.

CAUTION

CAUTION:

The hazard or unsafe practice could result in minor injury.

NOTICE

NOTICE:

Possibly dangerous situation, goods might be damaged.

IMPORTANT

IMPORTANT:

Helpful information.

4 Safety Notices

This equipment is normally used or connected to circuits that may employ voltages that are dangerous and may be fatal if accidentally contacted by operating or maintenance personnel. Extreme caution should be exercised when working with this equipment. While practical safety precautions have been incorporated in this equipment, the following rules must be strictly observed:

4.1 Keep Away from Live Circuits

Operating and maintenance personnel must at all times observe all safety regulations. Do not perform maintenance on internal components or re-lamp with power ON.

4.2 Resuscitation

Maintenance personnel should familiarize themselves with the technique for resuscitation found in widely published manuals of first aid instructions.

IMPORTANT

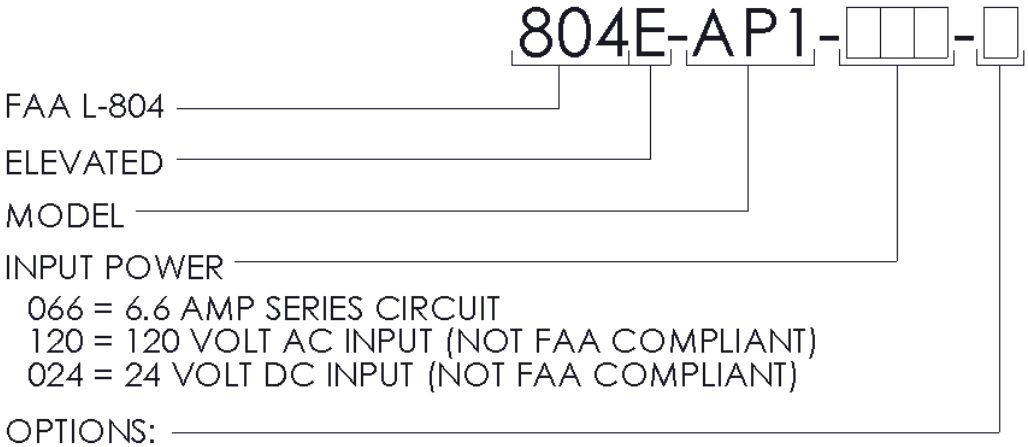
IMPORTANT:

See FAA Advisory Circular AC 150/5340-26 for additional information.

5 Table of Contents

List of Figures

6 Part Number Explanation



1. EXTERNAL ON/OFF SWITCH (CURRENT VERSION ONLY, STANDARD ON VOLTAGE VERSIONS).
2. MONITORING FEATURE , L-823 STYLE 7 MONITORING CONNECTION (FOR 120VAC AND 24VDC ONLY).
3. ANTI ROTATION PLATE FOR 16 INCH DIAMETER BASE PLATE. (PN 50244-1)
4. LOW INTENSITY OUTPUT PER ICAO 2.24 (VOLTAGE VERSION ONLY, NO PHOTOCELL INSTALLED) NOT FAA COMPLIANT.
5. MONITORING FEATURE L-823 STYLE 6 MONITORING CONNECTION (FOR EXTERNAL LOGITRAC).

7 General Description

7.1 General

The Crouse-Hinds elevated runway guard light (ERGL) is an ETL verified FAA L-804. The ERGL runway guard light is an elevated light fixture consisting of two LED modules that alternately flashes 45-50 per minute in yellow to identify taxiway holding position lines. The clear signal lenses are glass and are housed in aluminum enclosures. Access to each LED module is made through a hinged cover secured by locking latches. No special tools are required for maintenance. The Universal Power Supply is housed in an aluminum enclosure attached between the two LED boards. Universal Power Supply can be changed with a nut driver and disconnecting the fast-on terminals from the terminals. A spare door with replacement circuit cards can be slid back onto the hinge pin and fast-on terminals reattached to circuit card terminal blocks. Positive angular adjustment is made by moving the hairpin cotter on the support pin through the appropriate hole in the steel side supports and post. The unit is attached to a standard steel 10-1/4 dia. B.C. L-867 light base (customer supplied) and heavy 12-inch diameter base plate (customer supplied, see accessories, page 4) with a 2-11 1/2 NPSM threaded aluminum coupling. The coupling is prevented from rotating due to jet blast by an aluminum anti-rotation plate bolted to the base plate. In addition, the coupling is prevented from rotating and lifting out of its aluminum slide fit mount by set screws. A stainless steel tether is provided for securing the unit to the base plate. Power is provided to the unit through an L-823 style plug. A ground stud is provided internal for units with monitoring and external for units without. All hardware is type 18-8 stainless steel. Power is provided to the unit through an appropriate size isolation transformer (not provided) or name plate rated AC or DC power sources. The average weight of the unit is approximately 45 lb.

7.2 Units without Control System Monitoring (6.6A)

Power provided to unit from the 65W, 6.6A isolation transformer through a supplied 5-pin molded L-823 plug. See Figure 7 on page 19 (without monitoring).

7.3 On/Off Switch (Option -1 (6.6A)) Mode 1

Allows unit to be serviced or have Universal Power Supplies changed in field without turning power off at source. Switch isolates the secondary of isolation transformer from the internal circuitry.

7.4 6.6A Series Unit with Monitoring (Standard Unit or Option 5) - Mode 1

Unit requires connection to a 65W, 6.6A series secondary isolation transformer. A molded female connector (L-823, Style 7) is provided for the monitoring connection to a 5-pin L-823 style plug. The 5-pin female connector provides for connection to the isolation transformer, a ground lead for connection to the L-867 internal ground stud, and two leads for connecting the monitoring signal lines. Shielded monitor leads are connected to the circuit card relay common and normally open or closed contact (customer can change this connection depending on their preference). The monitoring relay (rated 120V, 2 A resistive load) will provide a signal path for failure detection if the fixture is not operating correctly to a customer provided indicator. Per FAA AC 150/5340-28, a three or five step FAA L-828 constant current regulator should be used for powering the Runway Guard Light.

For Option 5, the monitoring connector is changed to an L-823, Style 6 connector for direct power monitoring connections to Cooper Crouse-Hinds Logitrac Device. The indication is typically set to NC for Option 5.

7.5 115-250 VAC 50/60 Hz. Voltage Unit with Monitoring and On/Off Switch (Option 2) - Mode 2

A molded female connector is provided for connection to a 5-pin L-823 style plug. The 5-pin female connector provides for connection to the 115-250 AC source, a ground lead for connection to the L-867 internal ground stud, and two leads for connecting the monitoring signal lines. Shielded monitor leads are connected to the circuit card relay common and normally open or closed contact (customer can change this connection depending on their preference). The monitoring relay is rated for 120V, 2 A resistive load and will provide a signal path for failure detection if the fixture is not operating correctly to a customer provided indicator. The fixture is also equipped with a photocell to control light intensity. Photocell allows for full intensity light output from fixture during high ambient lighting conditions and then reduces fixture output light intensity to 30% during low ambient light conditions.

7.6 24 DC Voltage Unit with Monitoring and On/Off Switch (Option 2)

A molded female connector is provided for connection to a 5-pin L-823 style plug. The 5-pin female connector provides for connection to the 24 DC source, a ground lead for connection to the L-867 internal ground stud, and for connecting the monitoring signal lines. Shielded monitor leads are connected to the Universal Power Supply common and normally open or closed contact (customer can change this connection depending on their preference). The monitoring relay is rated for 120V, 2 A resistive load and will provide a signal path for failure detection if the fixture is not operating correctly to a customer provided indicator. The fixture is also equipped with a photocell to control light intensity. Photocell allows for full intensity light output from fixture during high ambient lighting conditions and then reduces fixture output light intensity to 30% during low ambient light conditions.

IMPORTANT

IMPORTANT:

The photocell is disabled when Option 4 is ordered. Option 4, ICAO 2.24 output is constant for all brightness conditions.

7.7 Logitrac Digital Monitoring (6.6A Series Circuit Only)

This configuration is recommended for use with a Crouse-Hinds Digitrac ALCMS Computer, but not required. In addition, a Continuous Logitrac Adapter (CLA) and Continuous Logitrac Device (CLD) unit must be ordered as separate items and installed in the lighting vault and on the Lighting circuit. Contact Crouse-Hinds sales for assistance. Unit requires connection to a 65W, 6.6A series secondary isolation transformer and Option 5 is required. Power provided to the unit from the Logitrac through a supplied 5-pin molded L-823 plug. A circuit number (CKT) and address number (ADRS) must be programmed onto the CLD in order for the monitoring portion to function with the CLD. The CLA can report the monitoring information directly to the Crouse-Hinds Digitrac Computer System, or the monitoring information can be obtained from a dry contact on the CLA in the lighting vault. Connection to a three or five step FAA L-828 Constant Current Regulator is still required.

7.8 Environmental

Temperature:	-55º to +55ºC
	(-67º to +131ºF)
Altitude:	0 to 10,000 feet
Humidity:	0 to 100 percent
Wind Loading:	Up to 300 MPH

7.9 FAA Specification

Unless noted, meets requirements of L-804 per FAA AC 150/5345-46 (latest version) and FAA Engineering Brief No. 67 "Light Sources other than Incandescent and Xenon for Airport Light and Obstruction Light Fixtures." Fixture performance and operation has been verified by ETL. Fixture meets the requirements of Low-Visibility Taxiway light Systems as specified in FAA AC 150/5340-30. Also meets requirement of ICAO Annex14 specification, Vol. 1, Section 5.3.22 Configuration A, High Intensity. Light housing front surfaces, baffle plate and lens caps painted black. All other external parts are painted aviation yellow with the exception of frangible coupling, stainless steel hardware, tether, hinge, and latch.

Low intensity version meets photometric requirements outlined in ICAO 2.24. Low intensity version is not FAA certified by ETL or accepted by FAA.

7.10 Accessories:

33003 65W 6.6/6.6 AMP SERIES ISOLATION TRANSFORMER – 6.6A INPUT.

33004 100W 6.6/6.6 AMP SERIES ISOLATION TRANSFORMER – 6.6A INPUT.

33005 100W 20/6.6 AMP SERIES ISOLATION TRANSFORMER – 20A INPUT.

AP1832, 12-3/8 INCH DIAMETER (10-1/4 DIA. B.C.) HEAVY BASE PLATE WITH 2 INCH NPS THREAD.

AP2832, 16 INCH DIAMETER (14-1/4 DIA. B.C.) HEAVY BASE PLATE WITH 2 INCH NPS THREAD.

10046-282-PIN L-823 FEMALE CONNECTOR ASSEMBLY.

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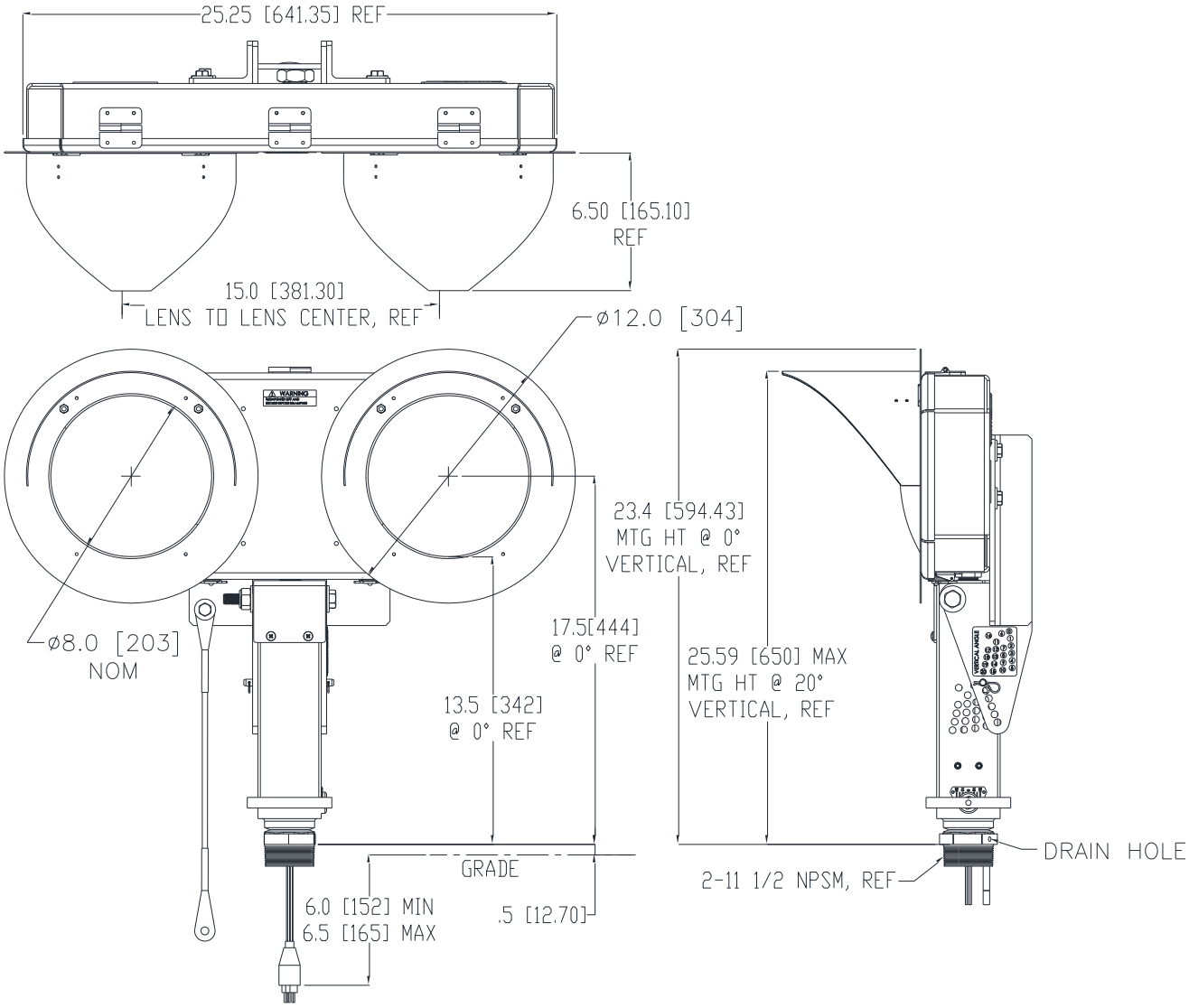


Figure 1 - General Dimensions

8 Installation

8.1 General

Locations for L-804 elevated runway guard lights are shown in FAA AC150/5340-28 and FAA AC 120-57A. In addition, the 10-1/4 diameter B.C. steel L-867 light base should be installed per above mentioned advisory circular. The L-867 light base flange is installed with the top of the flange flush with the concrete as finished grade reference. This will maintain the maximum 26-inch unit mounting height at 20º vertical or the 14-inch unit minimum mounting height to bottom of lens. A heavy base plate (P/N AP1832 [12-3/8 dia.] or AP2832 [16-inch dia.]) should be used with this unit due to high wind loading requirement. The 3/8 hardware used to secure the base plate should have bolts 1-3/4 inches long as a minimum (to attach tether and anti-rotation plate - 2-inch long bolts provided). Base plate gasket and base plate should be installed on light base, but do not fully secure bolts until L-804 unit has been installed.

DANGER

DANGER:

INSTALLATION OF UNIT TO BE DONE WITH PRIMARY POWER OFF AND SECURED.

8.2 6.6A Series Unit without Monitoring

Install appropriate isolation transformer into light base and make necessary primary power connections using L-823 connectors. Isolation transformer secondary connector will seat in base plate L-823 connector holder. (Unit includes a Standard Monitoring Relay. See Section 8.9.)

8.3 6.6A Series Unit with Monitoring (Standard Unit or Option 5)

Monitoring is included with all units, and the use of an L-867 base with an internal ground is required. Install appropriate isolation transformer into light base and make necessary primary power connections using L-823 connectors. Attach power monitoring cables to the supplied 5-pin L-823 connector. Connect 5-pin molded female connector as follows: L-823 plug to isolation transformer, L-823 receptacle to field remote signal line, and green lead with ring terminal to light base internal ground stud.

IMPORTANT

IMPORTANT:

Large diameter receptacle is for monitor relay common contact and small diameter receptacle for monitor relay normally (closed or open) contact.

The 5-contact L-823 receptacle will connect to the L-804 unit's 5-pin L-823 plug, 5-contact receptacle seats in base plate L-823 connector holder.

For Option 5, the monitoring connection is changed to L-823, style 6, connector for direct connection to the Crouse-Hinds Logitrac Device. The style 6 connector will directly connect to the middle lead of the Logitrac Device.

IMPORTANT

IMPORTANT:

Connecting the style 6 monitoring lead to the incorrect Logitrac lead may damage the L-804 unit.

8.4 115-250VAC and 24VDC Voltage Unit without Monitoring

No monitoring installations have a 5-conductor L-823 plug. The connection can be extended using Crouse-Hinds part number 10060-6-ABC where "ABC" is the length in inches. Option 4 includes one 394 inches [10m] extension cable.

8.5 115-250VAC Voltage Unit with Monitoring (Option 2)

When monitoring is required, use an L-867 base with an internal ground. Install on appropriate light base and make necessary primary power connections using supplied 5-pin L-823 connector. Connect 5-pin molded female connector as follows: L-823 plug to input AC power, L-823 receptacle to field remote signal line L-823 plug and green lead with ring terminal to light base internal ground stud.

IMPORTANT

IMPORTANT:

Large diameter receptacle is for monitor relay common contact and small diameter receptacle for monitor relay normally (closed or open) contact.

The 5-contact L-823 style receptacle will connect to L-804 unit's 5-pin L-823 style plug, 5-contact receptacle seats in base plate L-823 connector holder.

8.6 24VDC Voltage Unit with Monitoring (Option 2)

When monitoring is included with unit, use an L-867 base with an internal ground. Install on appropriate light base and make necessary primary power connections using supplied 5-pin L-823 connector. Connect 5-pin molded female connector as follows:

- L-823 plug to input DC power, Large Pin – Relay common, Small Pin – Monitoring.
- L-823 receptacle to field remote signal line L-823 plug.
- Green lead with ring terminal to light base internal ground stud.

IMPORTANT

IMPORTANT:

Large diameter receptacle is for monitor relay common contact and small diameter receptacle for monitor relay normally (closed or open) contact.

The 5-contact L-823 style receptacle will connect to L-804 unit 5-pin L-823 style plug, 5-contact receptacle seats in base plate L-823 connector holder.

24VDC or 115-250VAC low intensity output without monitoring unit supplied with extension cable of 33 ft (10m), 16AWG Style 8 secondary extension cable. This allows simple connection to supply voltage.

8.7 Tools Required for L-804 Installation

Tools required for installation are 5/32 inch Allen key, 9/16 socket and wrench, phillip screwdriver and channel locks to accommodate a minimum opening of 1-3/4 inches.

8.8 L-804 Unit Installation

WARNING

WARNING:

Be sure POWER is OFF and secured.

Place the anti-rotation plate on top of base plate. Hex cutout to be over threaded center hub in base plate. Plug 5-pin L-823 style plug into mating receptacle held in center of base plate. With L-804 unit upright, engage frangible coupling threads into base plate threaded center hub a couple of turns.

It is recommended that anti-seize compound (i.e. Loctite Anti-seize 767 or equal) be applied to frangible coupling threads prior to installation to prevent galling and seizing. Loosen the set screws in L-804 unit post holding the frangible coupling. Thread frangible coupling all the way down into the base plate. Align anti-rotation plate hex with frangible coupling hex. Bolt anti-rotation plate to base plate.

IMPORTANT

IMPORTANT:

The anti-rotation plate will bend slightly when fully bolted in place.

Bolt tether to a base plate mounting hole. Align L-804 unit yoke perpendicular with taxiway centerline and tighten the four previously loosened set screws. Return power to circuit. L-804 unit should begin flashing. If L-804 unit provided with optional On/Off switch, be sure switch is in ON position.

8.9 Standard Monitoring Relay Connection for Option 2 ONLY

You have an option of a normally open or normally closed contact to be used for failure monitoring. With **POWER OFF** and secured, open the front cover of the enclosure. Locate CN10 (Common) CN7 "N.O." (No Alarms) or CN11 "N.C." (Alarm Indication) on circuit board p/n: 50542. Wire per Figure 4.

Option 2, 120VAC and 24 VDC FAA intensity (Not option 4) units come with the Monitoring Relay connection wired as showed in the Power Supply Diagrams. (See Figure 8 & 9)

8.10 Vertical Adjustment

The fixture can be aimed in elevation vertically from 0 to +20 degrees. The vertical adjustment has been factory preset at zero degrees. Remove one hairpin cotter on the adjustment pin on the post. Position the L-804 unit to the desired vertical adjustment by aligning the appropriately marked degree hole in the post with its mating hole in the yoke. Install adjustment pin removed from zero degree holes through new desired vertical adjustment holes. Place the hairpin cotter in the adjustment pin hole. Vertical angle setting will be determined by the local airfield engineer. Refer to FAA AC 150/5340-28.

8.11 Horizontal Adjustment

The fixture can be aimed horizontally from -20 to +20 degrees. The horizontal adjustment has been factory pre-set to zero degrees. If required, loosen the four set screws at zero degrees located bottom of the post. Rotate the L-804 to the desired horizontal adjustment by aligning the appropriate marked degree holes on the post. Tighten the set screws from zero degree holes at the new desired horizontal adjustment. Horizontal angle setting will be determined by the local airfield engineer. Refer to FAA AC 150/5340-30 (latest version).

8.12 External Ground Stud

An external ground stud is provided in the head enclosure for grounding the L-804 unit. Use #12 AWG (3.5 sq. mm) minimum for ground wire.

IMPORTANT

IMPORTANT:

L-804 units with monitoring have an internal ground. Also, the female 5-pin L-823 style plug ground should be connected to the internal L-867 ground stud as explained in Section 8.3.

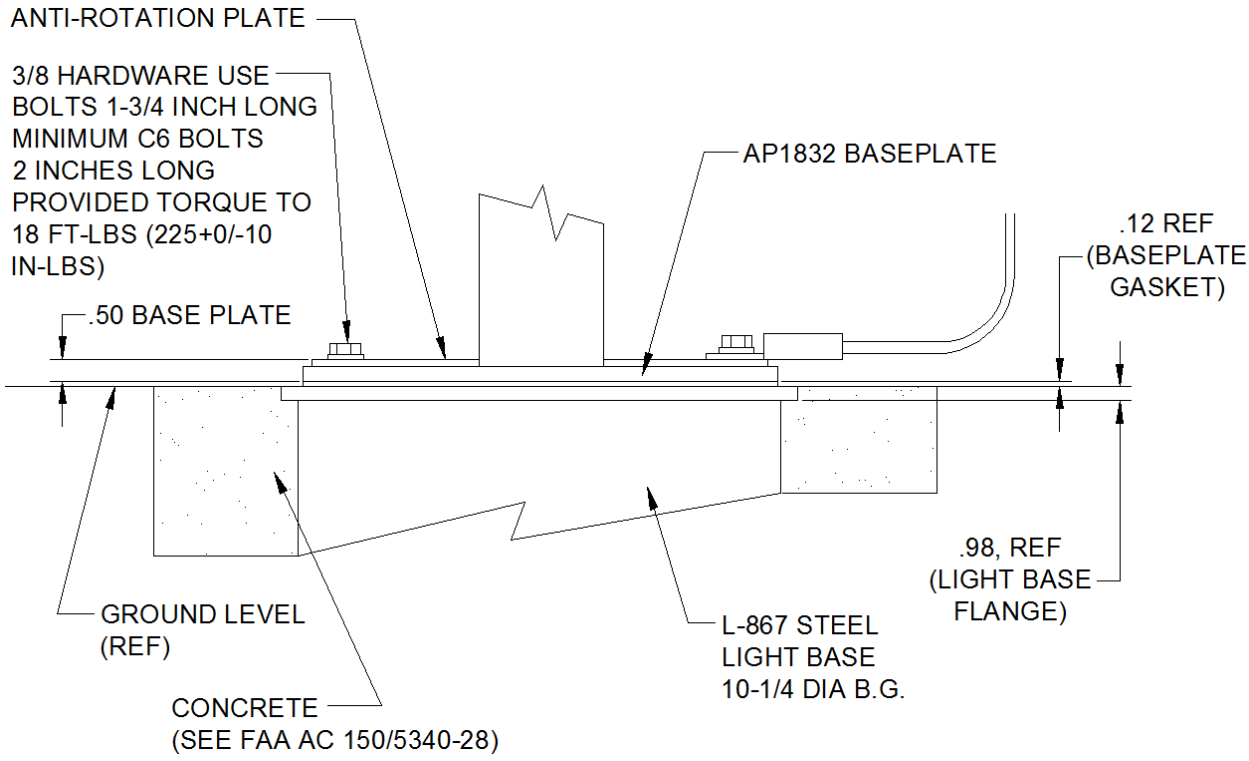


Figure 2 - Baseplate Installation Illustration

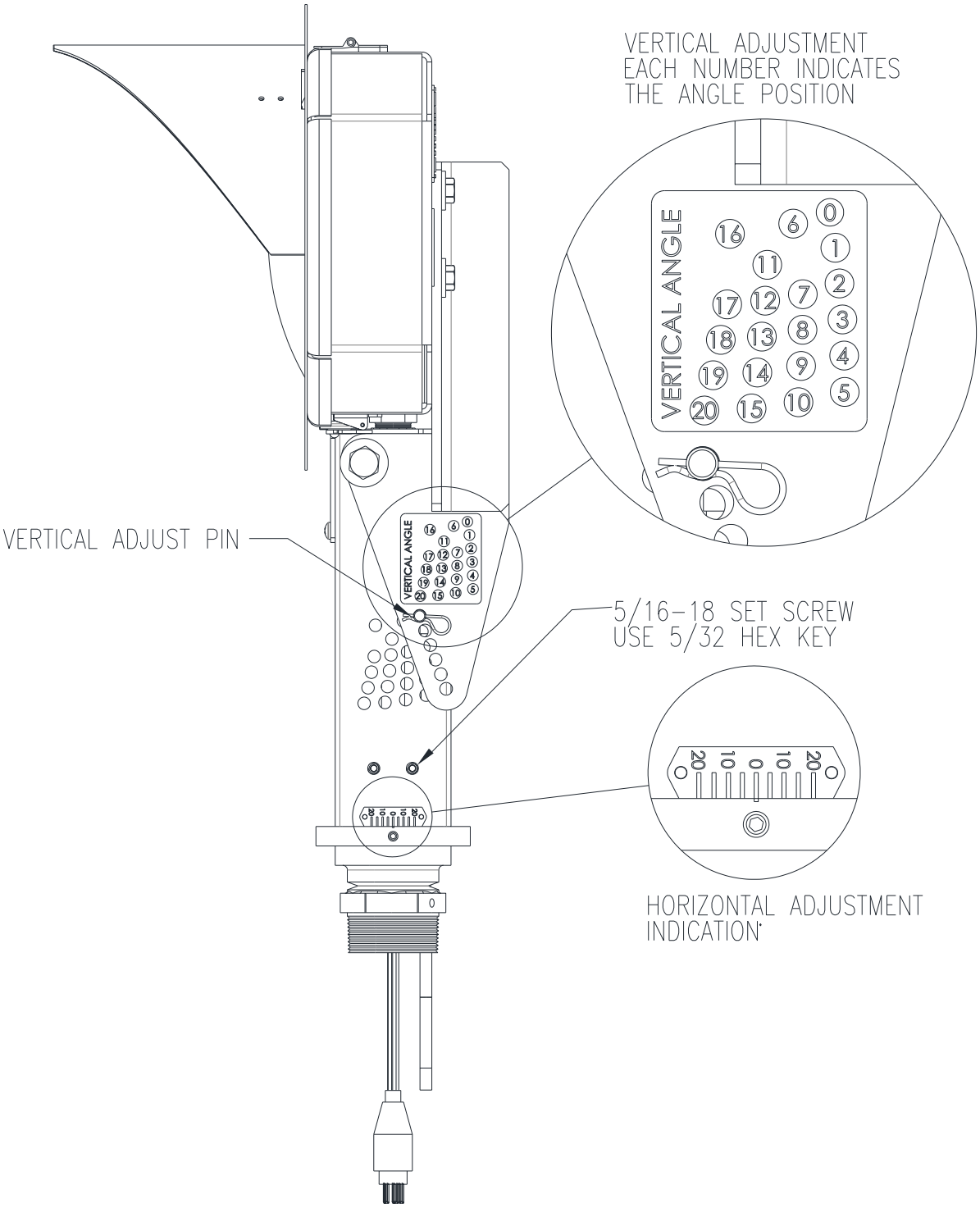
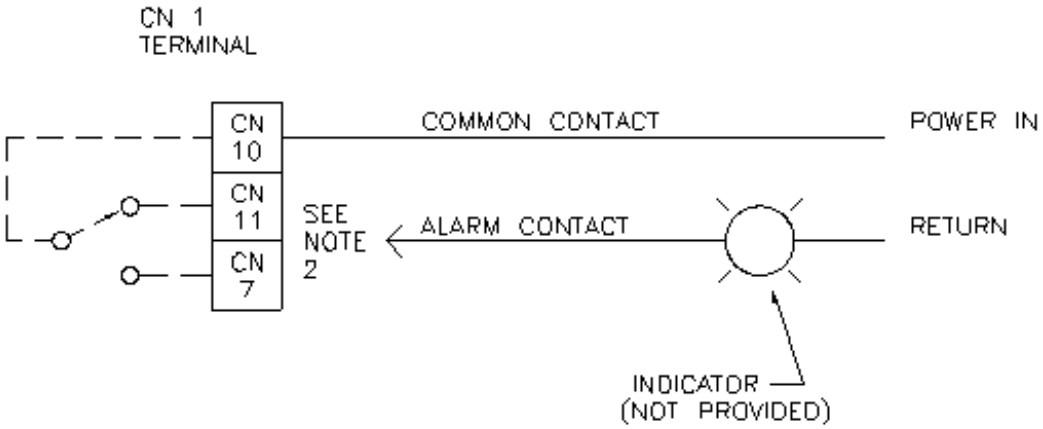


Figure 3 - Adjustment Illustration

THE L-804 MONITOR CIRCUIT IS EQUIPPED WITH AN ALARM RELAY. THIS RELAY WILL ACTIVATE IN ACCORDANCE WITH THE FAA ADVISORY CIRCULAR REQUIREMENTS. CONNECT THE RELAY CONTACTS TO THE ALARM CIRCUIT AS SHOWN BELOW.



NOTES:

1. "POWER IN" MAY BE ANY VOLTAGE UP TO 120 VAC OR 48 VDC. CURRENT IS LIMITED TO 2 AMPS RESISTIVE.
2. CONNECTING TO N.C. CONTACT WILL INDICATE ALARM (INDICATOR ON IN ALARM CONDITION). CONNECTING TO N.O. CONTACT WILL INDICATE NO ALARM WHEN THE UNIT IS ENERGIZED (INDICATOR OFF IN ALARM CONDITION).

INSTALLATION ILLUSTRATION
WIRING CONNECTIONS WITH MONITORING

Figure 4 - Installation Illustration (Option 2 ONLY)

9 Periodic Maintenance

WARNING

WARNING:

Verify power is OFF and secured before accessing interior of light heads and circuit card control box.

9.1 General

At least every 6 months, the L-804 unit should be checked for the following: loose hardware; tighten all loose hardware. Water inside light heads; replace broken lenses, worn gaskets and check hole plug seal (apply RTV if necessary). Wiring; open enclosure door and make sure terminals are properly seated. Chipped paint; touch up paint as necessary. Dirty lenses; clean with alcohol and dry with clean soft cloth. Dirty photocell sensor: same as lens cleaning.

9.2 Replacement of LED Modules

CAUTION

CAUTION:

Do not work on fixture when energized.

If replacement is required they should only be replaced with Crouse-Hinds part number 50637 LED Module. 5/16 nut driver is required for changing LED Module. Undo the latches on enclosure and open to gain access to Module. Disconnect the LED Module lead terminals. Install new LED Module then reconnect wire leads previously disconnected. Re-attach the four #8 nuts and secure the LED board. Close enclosure door and tighten the latches making sure EMI gasket is not pinched against door.

10 Troubleshooting

10.1 General

Work on electrical circuits should be done only by a qualified electrician with a working knowledge of airfield lighting circuits. Trouble-shooting is accomplished by means of process of elimination. It should be checked that the **POWER** is **OFF** and secured, and once one solution is tried, **POWER** is reapplied. Then **POWER** turned **OFF** and secured and another solution tried, etc. Repeat this until the problem is solved.

It is also assumed that the circuit is in proper working order from the isolation transformer secondary connector/or 5-pin L-823 style receptacle all the way to and including the power source. Use of a calibrated true RMS-reading multi-meter with a current sensing clamp-on attachment will aid in the trouble shooting of electrical circuits. A wiring diagram is located on the unit inside the circuit card control box on the back wall.

10.2 Problem Solving Guide – 6.6A

WARNING

WARNING:

Contact Crouse-Hinds Airport Lighting for assistance prior to operating a failed fixture. There may be dangerous voltage present on the input AC pins of the power supply.

It is recommended that a ferro style constant current regulator (2.8 to 6.6A_{RMS}) with a 65W isolation transformer or a voltage limited constant DC current source be used to test failed fixtures to limit the input voltage.

A buzzing or humming noise coming from the isolation transformer may indicate a failed power supply or LED module. It is also an indicator of dangerous voltage on the primary and secondary sides of the transformer.

NOTICE

NOTICE:

Applying a constant voltage greater than 50V (AC or DC) to the input will cause damage to the power supply..

Verify no wires are pinched or damaged and that the wire insulation is intact. Verify the input AC is connected to the feed thru (see Figure 7). Verify the power supply connections and appropriate jumper setting per Figure 5 & 7.

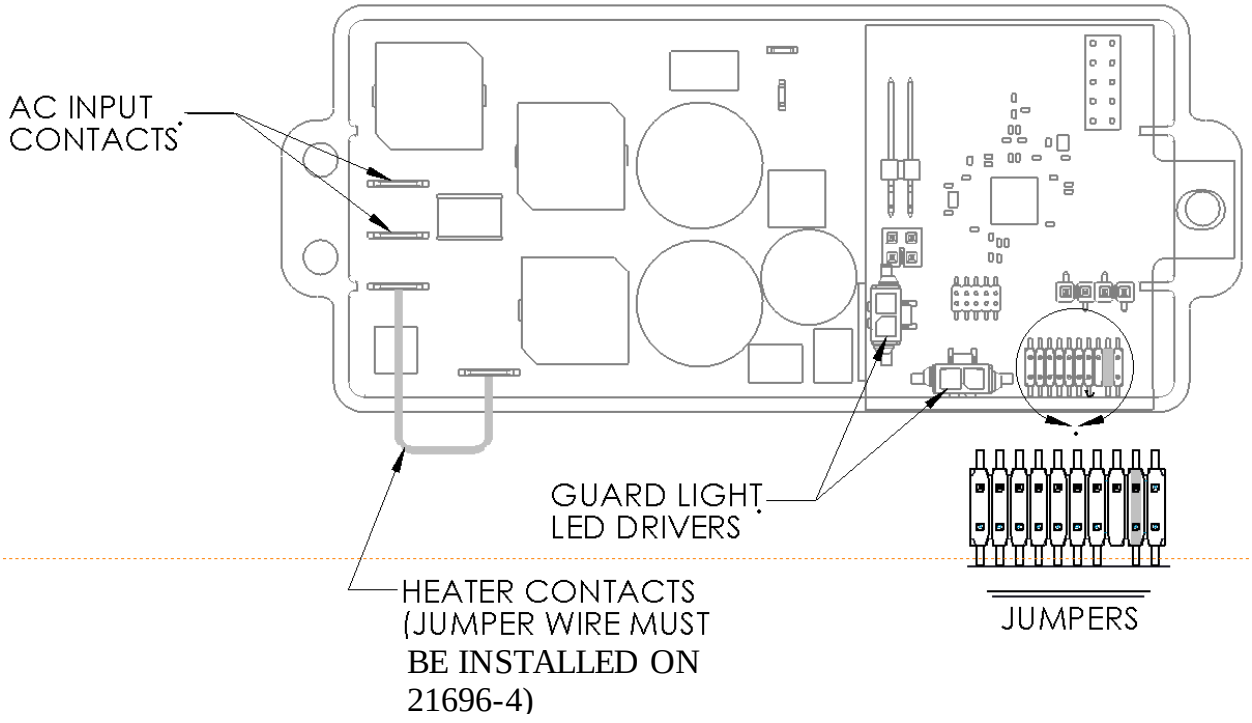


Figure 5 - Power Supply Connections, P/N 21696-3 OR 21696-4

The power supply continuously monitors the status of the LED module. There is a green status LED (see Figure 6) that may be visible through the potting. A blinking LED indicates the power supply has detected a fault condition.

Fault conditions include:

- Disconnected or 'Open' LED module
  - Replace cable if damaged or 'open'.
- Incorrect jumper setting or missing jumpers
  - Check proper jumper setting.
- More than 25% of the driven LED 'Shorted'
  - Replace LED module per Section 9.2.

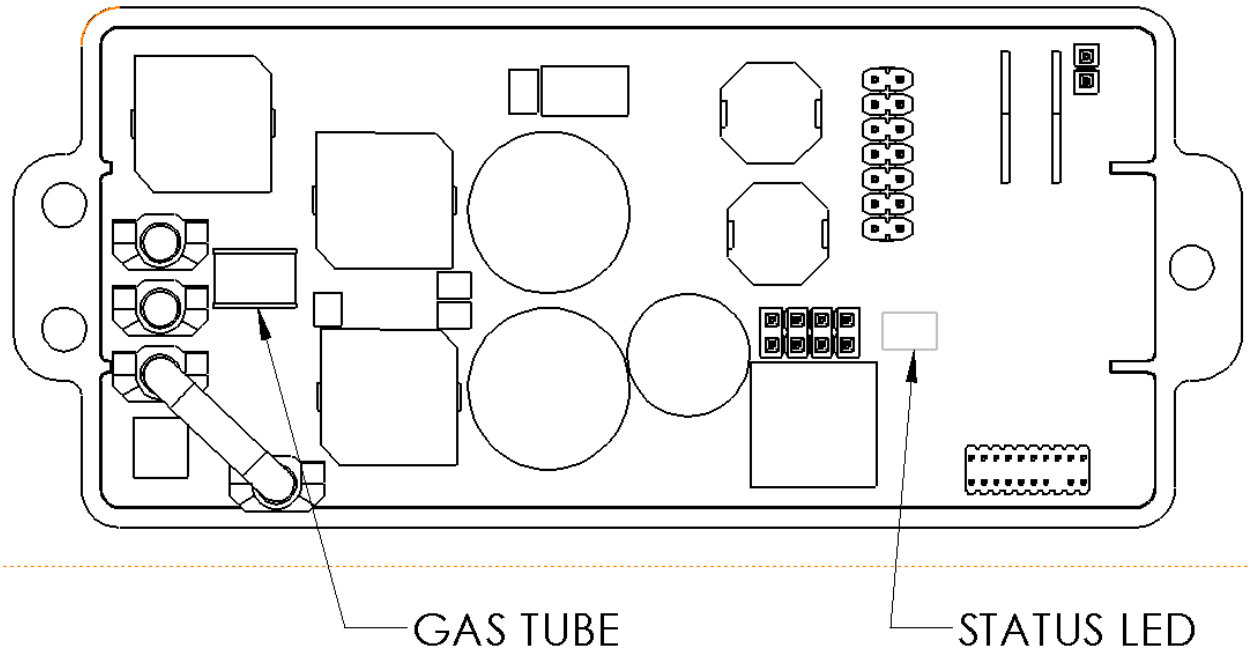


Figure 6 - Power Supply Status LED Location

- If the status LED is not lit, replace the power supply per Section 8.7 or contact Crouse-Hinds Airport Lighting Products for assistance. Refer to Section 11 to determine the appropriate replacement kit for your light unit.

10.3 Problem Solving Guide – 120VAC & 24VDC

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
LED(s) will not light on either 50637 LED module.	Input power is incorrect	For AC voltage units verify that the incoming voltage is within 90-265 VAC.
		For DC voltage units verify that incoming volt is within 22-30 VDC.
	Optional ON/OFF switch in OFF position	Turn switch on.
	Loose/broken wire(s)	Make proper connection.
		Verify connections per wiring diagram.
LED module heads not flashing	If either LED D25 or D26 is not lit.	Check F1. If bad, replace.
		If good, change: Circuit card 50542 for 115-250 VAC or 24 VDC units.
	If LED D24 on circuit card 50542 is lit.	See section Failure indicator D24 lit on 50542 Circuit Card.
FAA Voltage unit or DC unit not switching from Day to Night Mode correctly.	Photocell not pointing North	Make sure photocell is pointing to the North.
	Photocell not working or connected correctly.	Check wires for correct connection.
		Check D27 on 50542 Circuit Card with the photocell covered D27 should be lit.
		If D27 does not change when Photocell is covered, then check or replace Photocell assembly, 50560.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Failure indicator D24 Lit on 50542 Circuit Card (AC or DC voltage unit).	Input voltage outside acceptable range.	For AC voltage units verify that the incoming voltage is within 90-265 VAC.
		For DC voltage units verify that the incoming voltage is within 22-30 VDC.
	Check wiring.	Verify wire connections per wiring diagram.
	5 or more LED failures.	View unit during power rest observe number of flash and number of unlit LED(s). If the unit shuts down after 3 flashes and if there is more than 5 LED(s) unlit replace 50637 LED Module.
	Photocell open or shorted.	Check photocell with an ohmmeter Resistance should change from 18 Meg ohms when covered to 28k ohms when not covered.
Monitoring does not function.	Loose or broken wire.	Make proper connections per wiring diagram.
	LED D24 should be lit on circuit card 50542 when unit is detecting a failure.	If not lit, replace circuit card 50542 (115-250 VAC or 24 VDC).
	Problem with field remote signal lines.	Verify connections per wiring diagrams.
		Fix remote signal line wiring.

10.4 Recommended Field Quick Fix

At times, the process of elimination trouble shooting will not be convenient due to taxiway down time. Most problems with the L-804 unit generally will be limited to the circuit cards. These can be changed in the field very quickly, due to the fact all wiring utilizes fast-on terminations and no tools are required for changing the LED modules. No tools can be required for changing the circuit cards with the following recommendation; Disconnect the leads from the circuit cards. Slide the face plate door off of its slip hinge with old circuit cards still attached. Slide a new spare face plate with attached appropriate spare circuit cards back onto the cabinet slip hinge. Re-attach leads to circuit cards per wiring diagram. You may then fix circuit cards at your shop or contact Crouse-Hinds for repair or replacement of circuit cards.

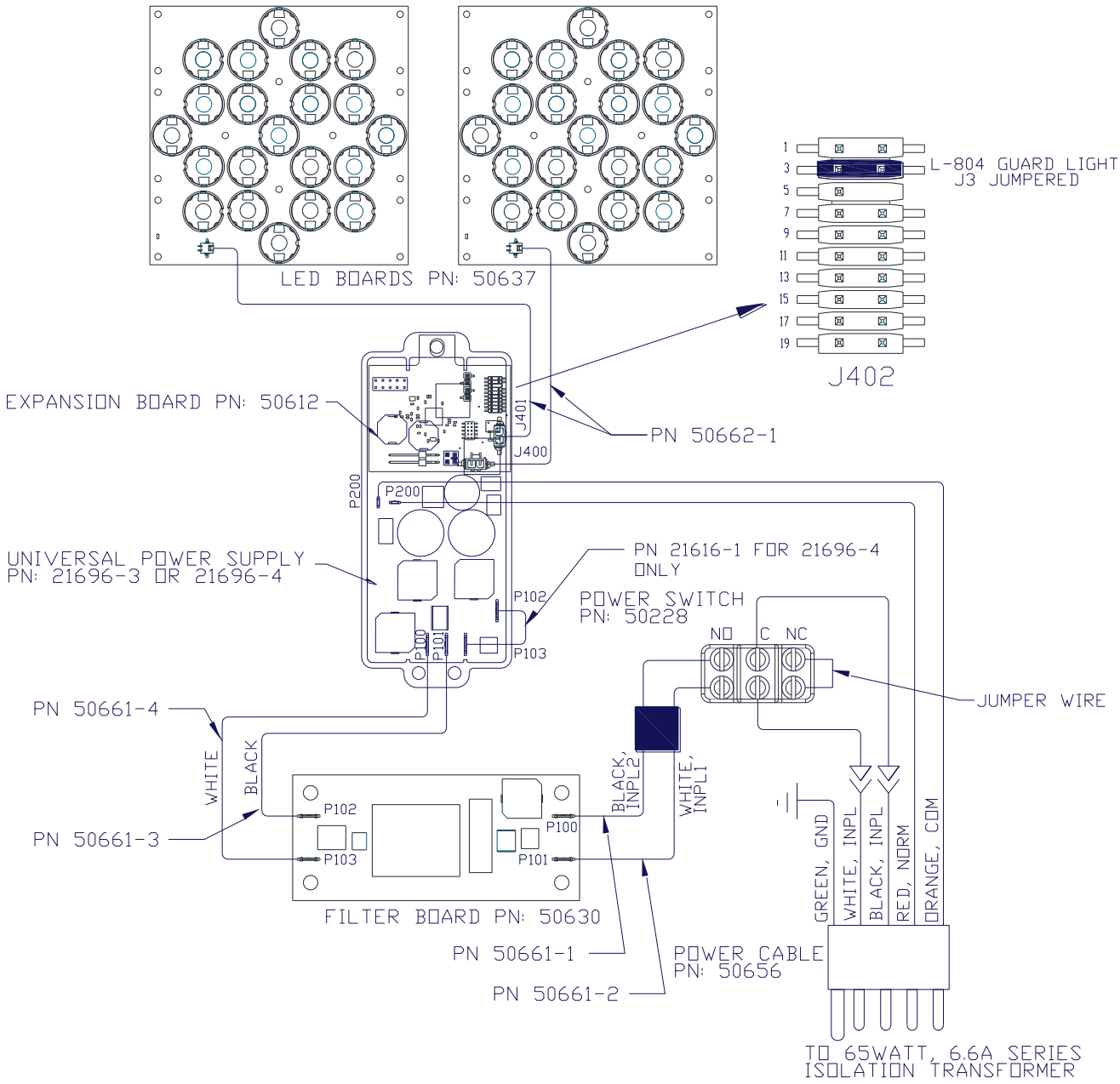


Figure 7 - L-804 LED Current Power Supply Diagram

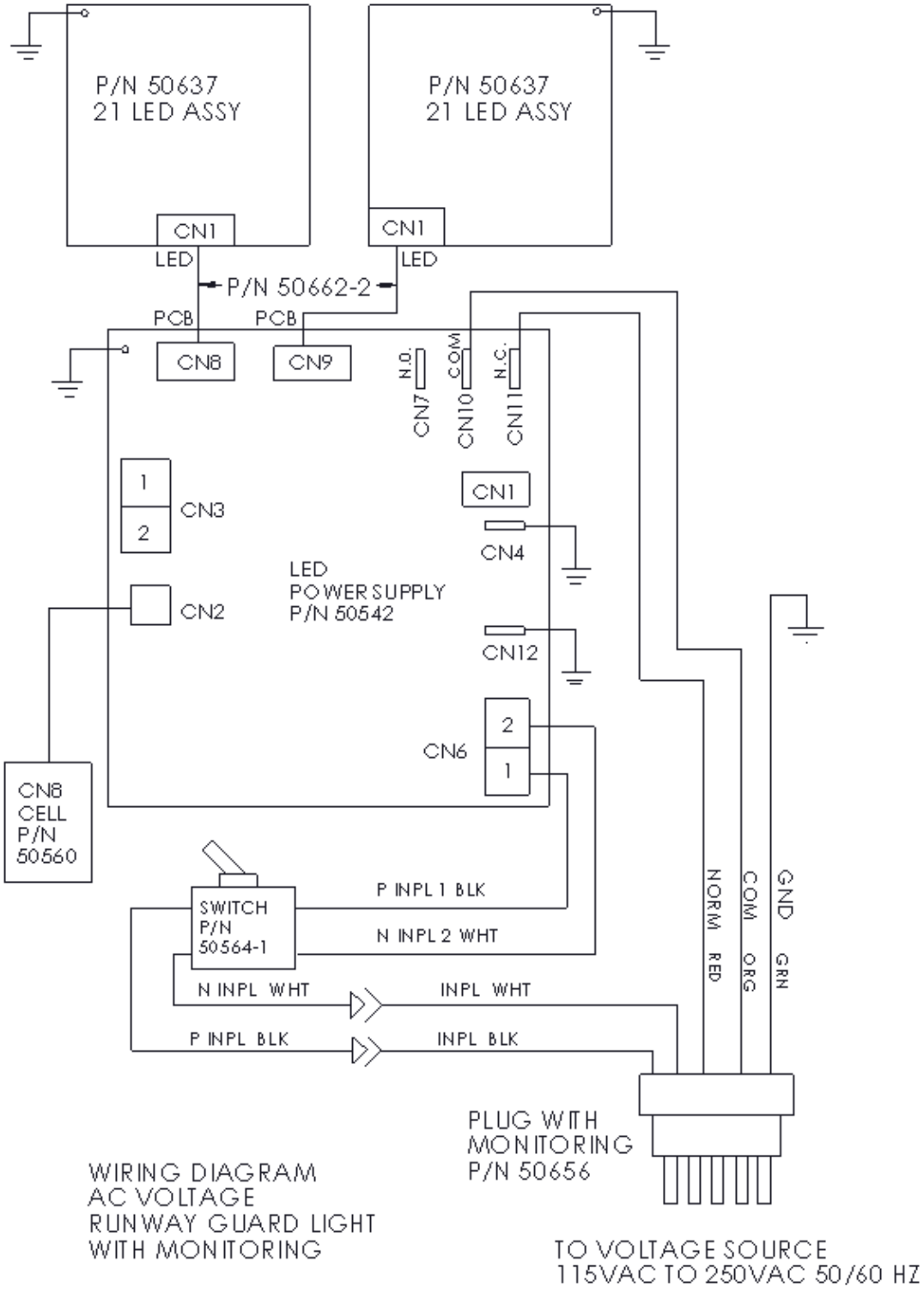


Figure 8 - L-804 LED Voltage Power Supply Diagram 120VAC

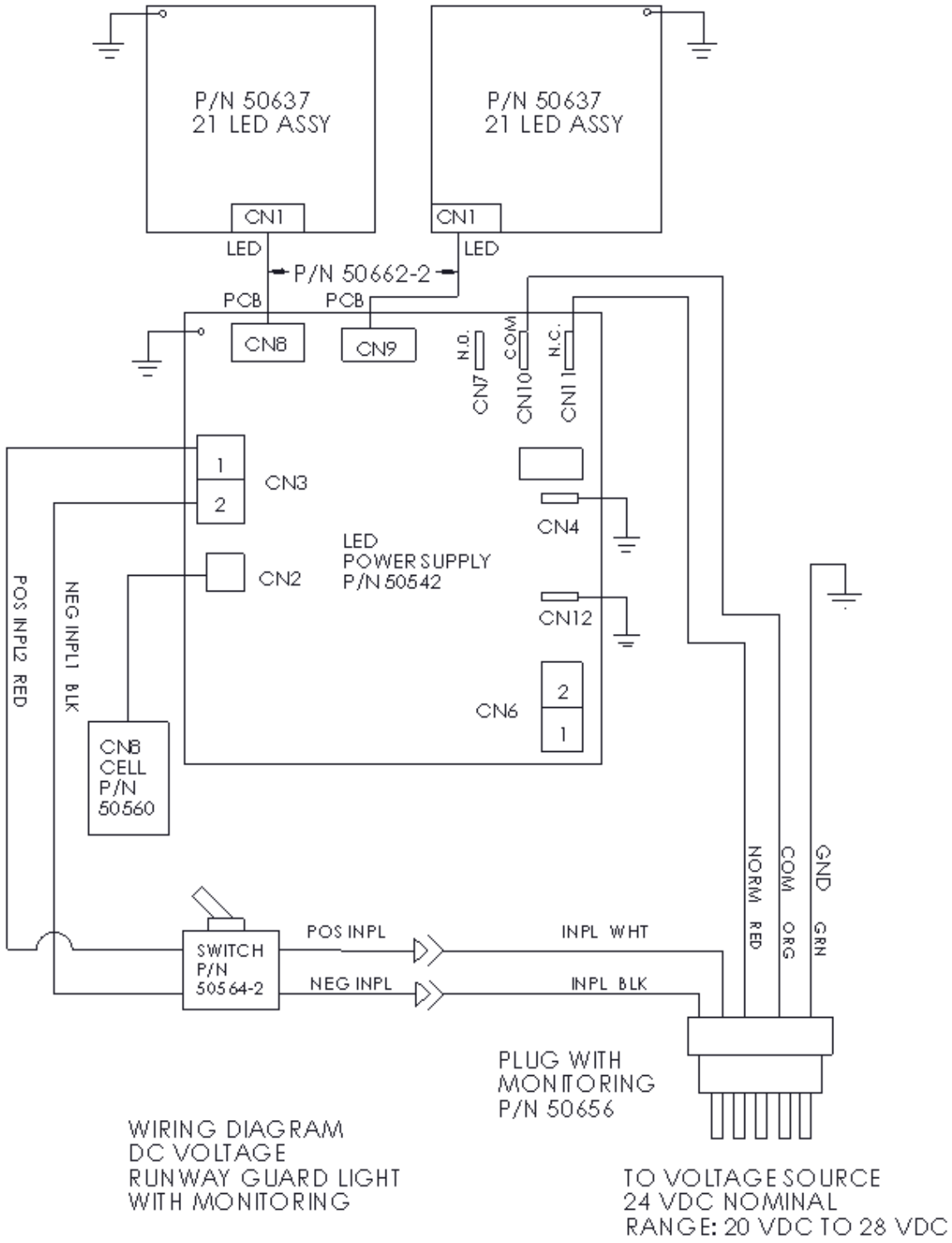


Figure 9 - L-804 LED Voltage Power Supply Diagram 24VDC

11 Recommended Spare Parts (2 Year Supply)

ITEM	QUANTITY
Spare Universal Power Supply Part No. 21696-3	1 per 5 units, 1 unit minimum (6.6A circuit).
Expansion board, Part No. 50612	1 per 5 units, 1 unit minimum (6.6A circuit).
Filter board, Part No. 50630	1 per 5 units, 1 unit minimum (6.6A circuit).
LED Assembly, Part No. 50637.	1 per 5 units, 1 min
Circuit card, Mode, Part No. 50542.	1 per 5 units, 1 min. 115-250 VAC circuit.
Circuit card, Mode, Part No. 50542.	1 per 5 units, 1 min. 24 VDC circuit.
Photo Cell Assembly, Part No. 50560	1 per 5 units, 1 min. 115-250 VAC or 24 VDC circuit.
F1 fuse on circuit card 50542, part number 1.25A, 250V, 5x20mm, glass tube.	1 per 5 units, 1 min. 115-250VAC or 24VDC .

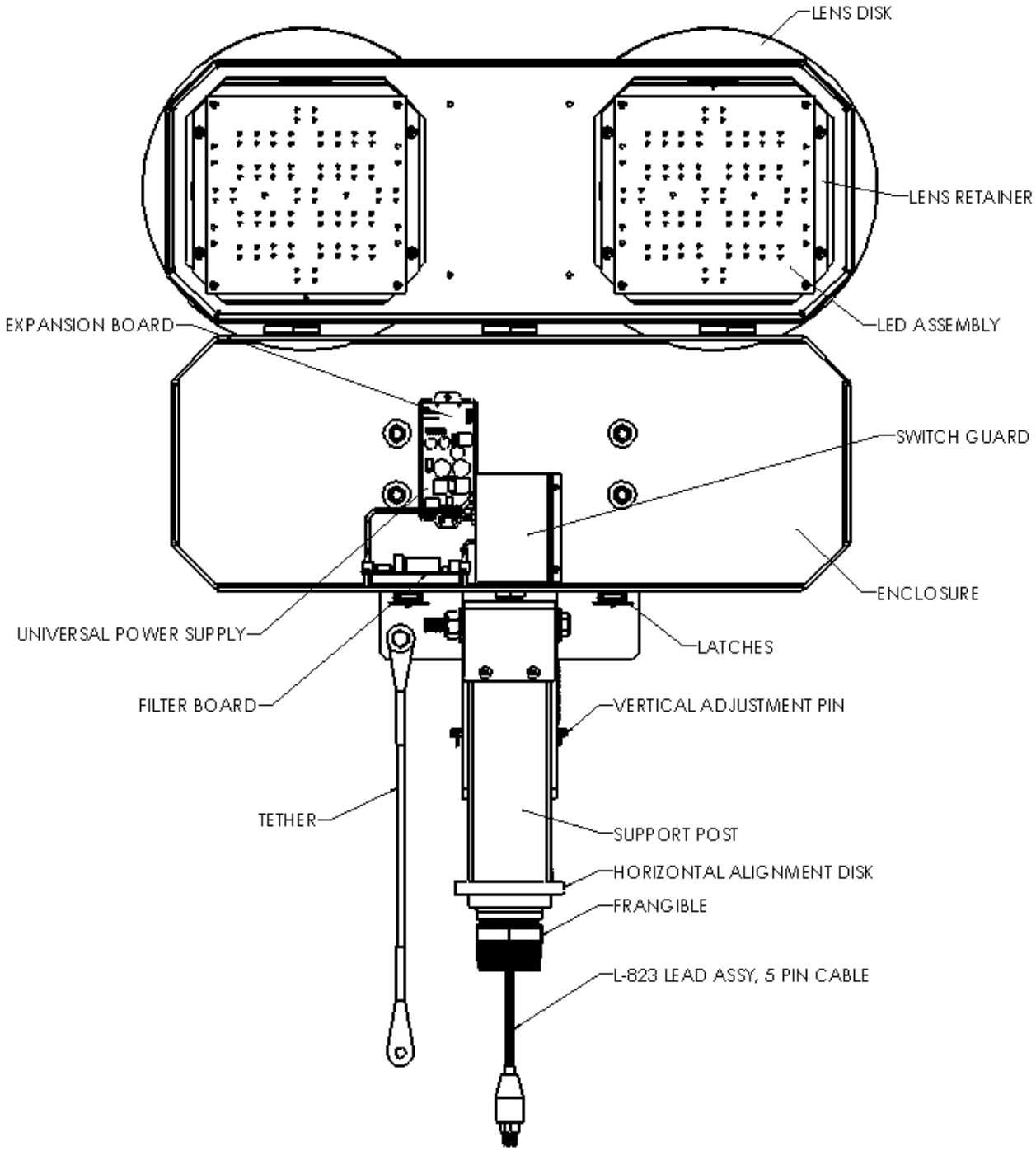


Figure 10 - Parts Identification (Sheet 1 of 3)

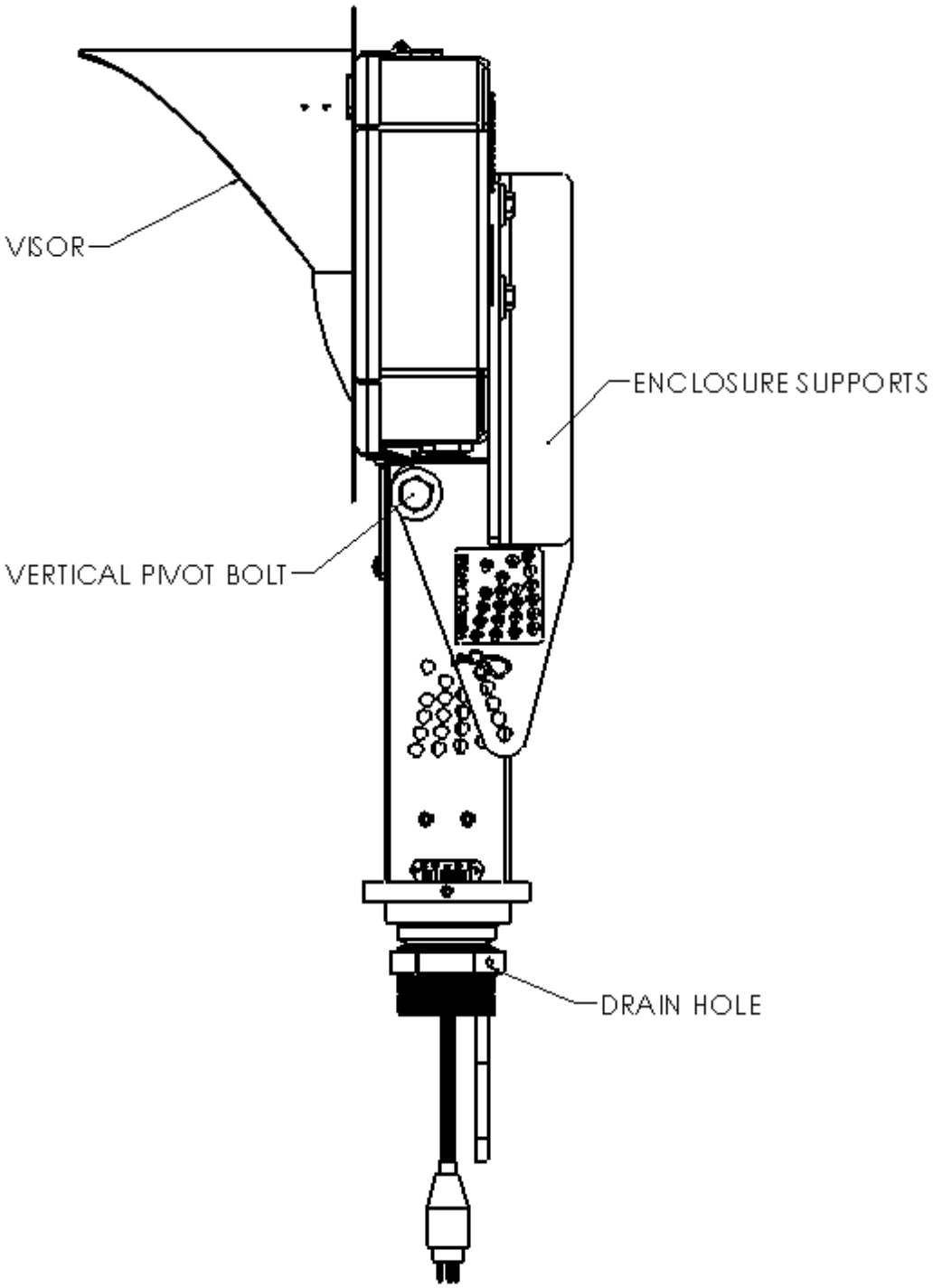
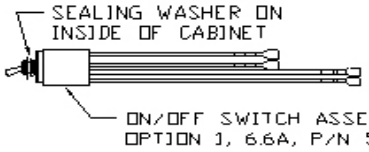
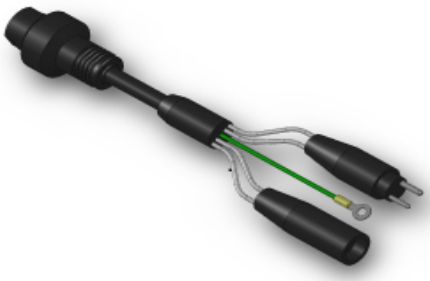


Figure 11 - Parts Identification (Sheet 2 of 3)

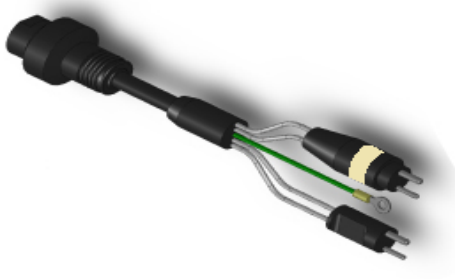


WARNING! APPLY SHRINK TUBING OR 2 LAYERS OF ELECTRICAL TAPE AROUND "INPL" TO "VOLT INPL" OR "CC INPL" CONNECTIONS.

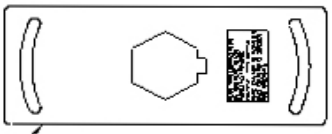
5 PIN FEMALE CONNECTOR
(NOT INCLUDED WITH OPTIONS 3)



P/N 50278 (STANDARD UNIT & OPTION 2)



P/N 50278-1 (OPTION 5)



1/4" HARDWARE:

BOLT, HEX HEAD, 1/4-20 X 3/4 LG, 18-8 STN STL, P/N 10A10-025D24
FLAT WASHER, 1/4, 18-8 STN STL, P/N 11A01-025D
LOCK WASHER, INTERNAL TOOTH, 1/4, 18-8 STN STL, P/N 11A21-025D
HEX NUT WITH NYLON INSERT, 1/4-20, 18-8 STN STL, P/N 10K11-025D12
PIN,SPRING, 1/4 DIA X3/8 LG, 420 STN STL, P/N 11C15-025D12

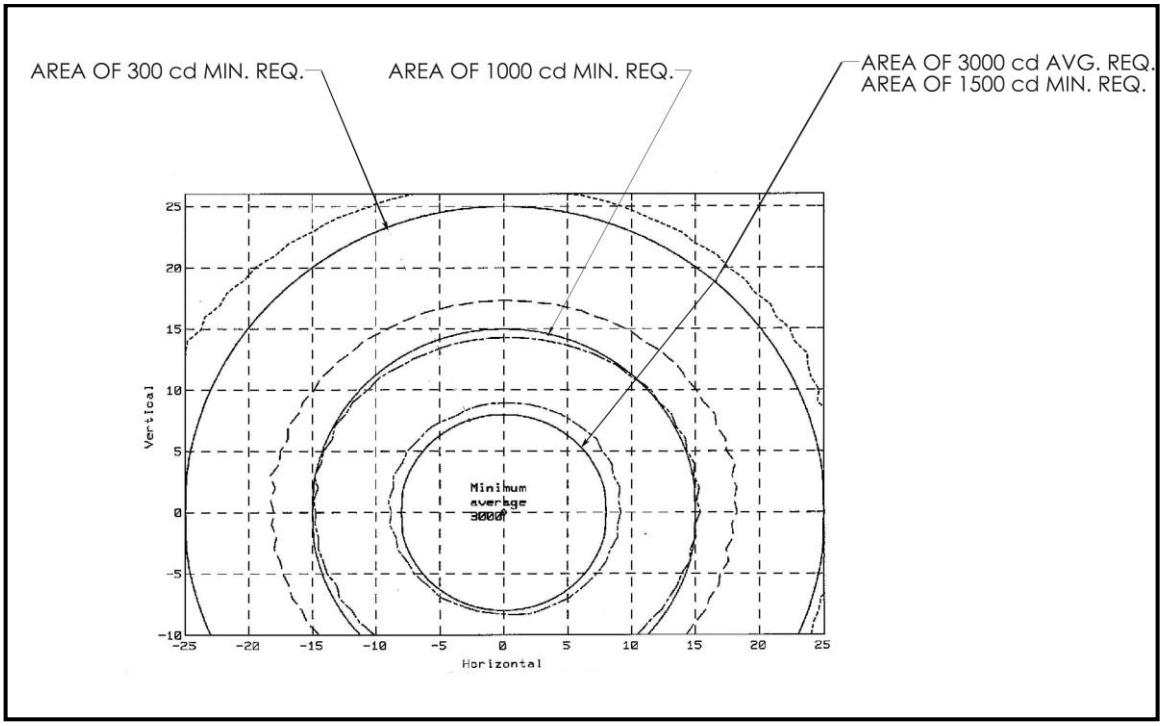
3/8 HARDWARE:

BOLT, HEX HEAD, 3/8-16 X 1 1/8 LG, 18-8 STN STL, P/N 03816-112-H-SS
FLAT WASHER, 3/8, 18-8 STN STL, P/N 11A01-037D
LOCK WASHER, SPLIT, 3/8, 18-8 STN STL, P/N 11A12-037DD
HEX NUT WITH NYLON INSERT, 3/8-16, 18-8 STN STL, P/N 10K03-037D
BOLT, HEX HEAD, 3/8-16 X 2 IN. LG, 18-8 STN STL, P/N 10A10-037D48

Figure 12 - Parts Identification (Sheet 3 of 3)

Appendix A

A-1 Typical Photometric Output @6.6 Amperes, Part Number 804E-AP1



A-2 Light Beam Orientation for Elevated Runway Guard Lights

RGLs should be oriented to maximize the visibility of the light by pilots of aircraft approaching the runway holding position. The orientation should be specified by the (airport) design engineer to aim the center of the light beam toward the aircraft cockpit, when the aircraft is between 150 feet (45 m) and 200 feet (60 m) from the holding position, along the predominant taxi path to the holding position. The vertical aiming angle should be set between 5 degrees and 10 degrees above the horizontal. The designer should specify aiming of the lights such that the steady burning intensity at all viewing positions between 150 feet (45 m) and 200 feet (60 m) from the holding position is at least 300 cd when operated at the highest intensity step. (Refer to AC 150/5345-46 (latest revision), Specification for Runway and Taxiway Light Fixtures, for specifications for the light intensity and beamspread of the L-804 RGL fixture.) If these criteria cannot be met for all taxi paths to the holding position, consideration should be given to the use of multiple fixtures aimed to adequately cover the different taxi paths. The use of in-pavement fixtures to increase the viewing coverage, or aiming the single fixtures on each side of the holding position to optimize the illuminations of the predominant taxi path.

A-3 50542 Assembly Drawing (showing indicator LEDs)