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Instruction Manual

MITL (Medium Intensity Taxiway Light)

Patent(s) Pending

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

Instruction Manual
MITL
AP1 Series

Table of Contents

1 Revisions

Rev. No.	Issue/Reissue Number Letter	Description	Checked	Approved
A	A219-123	Initial release	TT	5/30/19
B	A219-199	Pg 1: 6.1, Changed ‘30/45 Watt Series Isolation Transformer’ to ‘20/25 Watt Series Isolation Transformer without heater’.	IM	9/10/19

2 Product Warranty

Warranty

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

3 Safety Notices

This equipment is normally used or connected to circuits that may employ voltages which 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:

3.1 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 service with power ON.

DANGER

DANGER:

DO NOT PERFORM MAINTENANCE ON INTERNAL COMPONENTS OR SERVICE WITH POWER ON.

3.2 RESUSCITATION

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

4 Safety Symbols

4.1 Danger

DANGER:

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

4.2 Warning

WARNING:

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

4.3 Caution

CAUTION:

CAUTION **The hazard or unsafe practice could result in minor injury.**

4.4 Warning: Notice

WARNING:

NOTICE **Possibly dangerous situation, goods might be damaged.**

4.5 Warning: Important

WARNING:

IMPORTANT **Helpful information.**

5 Recommended Test Equipment and Tools

There is a wide variety of tools and equipment needed to safely and correctly perform airfield lighting equipment installation and maintenance. In addition to the obvious tools (screwdrivers, wrenches, etc.), there is a specialized equipment needed to do the job.

Multimeter

One of the most important pieces of test equipment is the Multimeter. It is used to measure voltages, currents, and resistances. Almost every single maintenance task requires the use of a multimeter at one point or another. A quality meter in good repair and calibration is a must because airfield lighting power distribution equipment produces non-sinusoidal waveforms, traditional average reading meters are inaccurate and have very limited use. Checking or adjusting equipment based upon incorrect current reading may dramatically reduce lamp life and adversely affect power equipment performance. A meter with TRUE RMS measuring capability with a current clamp-on accessory is needed to accurately measure distorted or chopped waveforms. All meter manufacturers offer TRUE RMS measuring meters. The following is a short list of Crouse-Hinds recommended TRUE RMS Multimeters from Fluke:

Manufacturer	Model Number
Fluke	287

Refer to the equipment manufacturer's manuals for the proper use, maintenance and calibration (if necessary) of all meters.

A 3/8-inch square drive socket and ratchet, and an open-end wrench, size 7/16 or 11 mm for the ¼-20 UNC fixture hex bolts.

A calibrated torque wrench (micrometer adjustable solid audible/tactile "click" impulse when torque value attained with an accuracy of +/- 4%) to fit a 7/16 or 11 mm socket for drive size of the socket to tighten the fixture hex bolts to 80 +/-5 in-lbs [9.04 +/- .565 Nm]. Torque wrenches: Sturtevant Richmont P/N 810751, range 30 to 150 in-lbs or equal, or Sturtevant Richmont P/N 810775, range 4 to 20 Nm or equal. Certificate of calibration included with suggested torque wrenches. Note, never loosen bolts with a torque wrench.

A 2-inch open end wrench, Proto 2-inch combination wrench P/N J1264 or equal, or channel locks capable of fitting a 2 inch [50.8 mm] hex, Irwin P/N 4935323 or equal.

Anti-seize (marine grade preferred, Henkel/Loctite P/N 34395 or 34026 or equal [http://www.henkelna.com/adhesives/product-search-1554.htm?nodeid=8797882515457]) with a K factor of 0.18 for **fully** coating the frangible coupling threads or base plate/stake hub threads. This will help facilitate removal of sheared frangible couplings or fixtures for replacement/maintenance. Only use an anti-seize, as other materials may wash away.

IMPORTANT

WARNING:

Failure to apply anti-seize at installation will result in impossible/ to near impossible removal of a frangible coupling from a threaded hub over time.

A strap wrench to accommodate a minimum diameter of 4.0 [101.6 mm] to help remove or install the fixture housing cover. BOA Tool Corporation P/N 45535 (fits a .75 [19.05 mm] to 6.75 [171.45 mm] diameter) or equal. This may require the use of a bench mounted 4-1/2-inch opening vise (pad the jaws to prevent damage to housing exterior finish) to hold the housing while loosening the fixture housing cover.

A 2-inch striking wrench to help loosen stubborn sheared frangible couplings from a hub, Proto P/N J2632SW (12 point, offset) or equal. You will also need a weighted hammer for striking.

A 3/8-inch square drive socket and ratchet, and an open-end wrench, size 9/16 or 14 mm for the fixture base plate 3/8-16 UNC hex bolts installed into a FAA L-867 base (24 inch [609.6 mm] depth).

A calibrated torque wrench (micrometer adjustable solid audible/tactile “click” impulse when torque value attained with an accuracy of +/- 4%) to fit a 9/16 or 14 mm socket for drive size of the socket to tighten the fixture base plate 3/8-16 UNC hex bolts to 225 in-lbs -0, +10% [25.42 -0, +10%] with an anti-seize that has a K factor of 0.18 applied to **fully** cover the bolt threads. Torque wrenches: Sturtevant Richmont P/N 810748, range 100 to 600 in-lbs or equal, or Sturtevant Richmont P/N 810782, range 10 to 50 Nm or equal. Certificate of calibration included with suggested torque wrenches. Note, never loosen bolts with a torque wrench.

A calibrated adjustable torque screwdriver to torque the external ground screw to 6 in-lbs [1.81Nm] minimum if the fixture is ordered with the option external power cord. Sturtevant Richmont P/N 810568 (comes with bits [hex, slotted, Torx, Phillips, sq. recess, bit holder, socket adapter], case and certificate of calibration), range 2 to 36 in-lbs/0.2 to 4 Nm or equal. Note, never loosen screws with a torque screwdriver.

A grounded ESD Wrist Strap when working on or handling fixture power supplies/LED boards. ESD Wrist Straps, also known as anti-static Wrist Straps, are used to prevent electrostatic discharge (ESD) by safely grounding a person working with electronic equipment or at an electronic assembly facility. It consists of a band of fabric with fine conductive fibers woven into it. The fibers are usually made of carbon-filled rubber, and the strap is bound with a stainless steel clasp or plate. They a usually used in conjunction with an ESD table mat on the workbench, or a special static-dissipating plastic laminate on the workbench. ESD Products brand (http://www.esdproduct.com/esd_wrist_straps.php) or equal.

A #2 x 4 inch (101.6 mm) long Phillips head screw driver for installing the Isolation Transformer’s FAA L-823 Style 8 secondary receptacle retainer plate screws into one of the recommended base plates for a L-867 base.

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6 General Information

6.1 General Description – MITL

The **MITL** (Medium Intensity Taxiway Light) is an elevated taxiway fixture comprised of an aluminum housing, globe retainer system, and frangible coupling with a blue glass dome. Internal illumination provides pavement edge marking on airfield taxiways. The colored glass dome indicates the correct color for day time non-illuminated identification to the specification. When illuminated, the colored glass dome with the correct LED(s) and power supply setting will produce the photometrics and chromaticity to meet specifications. The LED and electronics are housed in a IP54 compliant assembly per IEC 60529 (latest). The fixture and all components are EU RoHs compliant. The fixture can be used with either a 3 (4.8, 5.5, 6.6A output) or 5 step (2.8, 3.4, 4.1, 5.2, 6.6A output) Constant Current Regulator (CCR), 50 or 60 Hz. The power supply has a power factor of 0.99 in all steps, and efficiency greater than 80% at 6.6A. The power supply is compatible with all known CCR types, has a 3.5 Crest factor to ensure compatibility with Series CCRs, has a 0.88 second switch-on time, a typical initial turn on voltage of 1.5V, high frequency 400 Hz PWM to help eliminate flicker perception, and a 10k/5kA surge protection. The LED(s) have a projected life of greater than L70 (L70 = elapsed operating time in hours over which the LED light source maintains 70% of its initial output) @ 50,000 hours at 6.6A(1). The leveling adjustment bolts are type 18-8 hex heads which fit a standard socket/wrench size. The frangible coupling installation/removal hex fits a standard wrench size. All fixture exterior parts are yellow (FED-STD-595 color 13538). All fixtures are factory illuminated a minimum of 4 hours and meet the FAA requirements for EMI (electromagnetic interference) suppression. The standard fixture height is less than 350 mm (13.78 inches) from grade when installed on the base plates or stake mounts shown in this manual. The standard height fixture weighs approximately 2.5 pounds (1.13 Kg). The fixture is available in other various heights and with multiple frangible coupling thread sizes. The fixture is equipped with an external grounding lug that accepts #4-14 AWG wire. The fixture requires a minimum 6.6A, 20/25-Watt Series Isolation Transformer without heater.

6.2 Fixture Type/Color and Agency Compliance

a. **U.S. DOT FAA** (http://www.faa.gov/)

See part number breakdown in Table 1 for MITL

The following fixtures are approved to U.S. DOT FAA Advisory Circular (AC) AC 150/5345-46 (latest) and also meet FAA Engineering Brief (EB) EB67 (latest):

Taxiway:

MITL: L-861T (blue globe) , P/N 861T - _ - _ _ - _

Refer to FAA AC 150/5340-30 (latest) for design and installation details for airport visual aids and spacing.

b. **U.S. DOD UFC** (http://everyspec.com/DoD/DoD-UFC/ufc_3_535_01_6469/)

See part number breakdown in Table 1 for MITL

The following fixtures meet U.S. Department of Defense Unified Facilities Criteria (UFC) 3-535-01 (latest) for photometry, the mechanical requirements of FAA AC 150/5345-46 (latest), and requirements for light sources other than incandescent or xenon per FAA EB67 (latest), MITL meets the chromaticity requirements of NATO STANAG 3316 (latest):

Taxiway:

MITL: UFC (blue globe) , P/N 861T - _ - _ _ - _

Refer to UFC 3-535-01 (latest) for taxiway lighting standards installation and spacing.

c. **Canada TP312** (http://www.tc.gc.ca/eng/civilaviation/publications/tp312-menu-4765.htm)

See part number breakdown in Table 1 for MITL

The following fixtures meet the requirements of Canada Aerodromes Standards and Recommended PracticesTP312 (latest):

Taxiway:

MITL: TP312 (blue globe) , P/N 861T - _ - _ _ - _

Refer to TP312E (latest) for taxiway lighting standards installation and spacing.

d. ICAO Annex 14 (http://store1.icao.int/index.php/publications/safety/aerodromes/annex-14-aerodromes-volume-i-aerodrome-design-and-operations-english-printed-10885.html) (http://store1.icao.int/index.php/publications/safety/aerodromes/aerodrome-design-manual-part-4-visual-aids-doc-9157p4-english-printed.html) (http://store1.icao.int/index.php/publications/safety/aerodromes/aerodrome-design-manual-part-6-frangibility-doc-9157p6-english-printed.html) (http://webstore.iec.ch/webstore/webstore.nsf/Artnum_PK/32200)

See part number breakdown in Table 1 for MITL

The following fixture meets International Civil Aviation Organization (ICAO) Annex 14 Aerodromes Volume I Aerodromes Design and Operations (latest) for photometry and chromaticity, the frangible requirements of ICAO Document 9157 (AN/901) (latest) Aerodrome Design Part 6 for frangibility and the height restrictions (<350 mm) of the International Electrotechnical Commission (IEC) Technical Specification TS 61827 :

Taxiway:

MITL: ICAO (blue globe), P/N 861T - _ - _ _ - _

Refer to ICAO Document 9157 (AN/901) (latest) Aerodrome Design Manual Part 4 Visual Aids for taxiway edge fixture spacing.

e. NATO STANAG 3316
(http://infostore.saiglobal.com/store/Details.aspx?productID=453168)

See part number breakdown in Table 1 for MITL

The following fixture meets North Atlantic Treaty Organization (NATO) STANAG (latest) for photometry and NATO STANAG 3711 for chromaticity, the frangible requirements of ICAO Document 9157 (AN/901) (latest) Aerodrome Design Part 6 for frangibility and the height restrictions (<350 mm) of the International Electrotechnical Commission (IEC) Technical Specification TS 61827 :

Taxiway:

MITL: NATO (blue globe), P/N 861T - _ - _ _ - _

Refer to NATO STANAG 3316 (latest) for taxiway edge fixture spacing.

f. **U.S. Navy NAVAIR** (http://www.proconstructinc.com/jobs/TEAM-Paving/Air%20Field%20Taxiway%20Striping%20AFS13/TECH_MANUAL_100406.pdf)

See part number breakdown in Table 1 for MITL

The following fixtures meet U.S. Navy NAVAIR 51-50AAA-2 (latest) for photometry, the mechanical requirements of FAA AC 150/5345-46 (latest), and requirements for light sources other than incandescent or xenon per FAA EB67 (latest), except the MITL meets the chromaticity requirements of International Civil Aviation Organization (ICAO) Annex 14 Aerodromes Volume I Aerodromes Design and Operations (latest):

Taxiway:

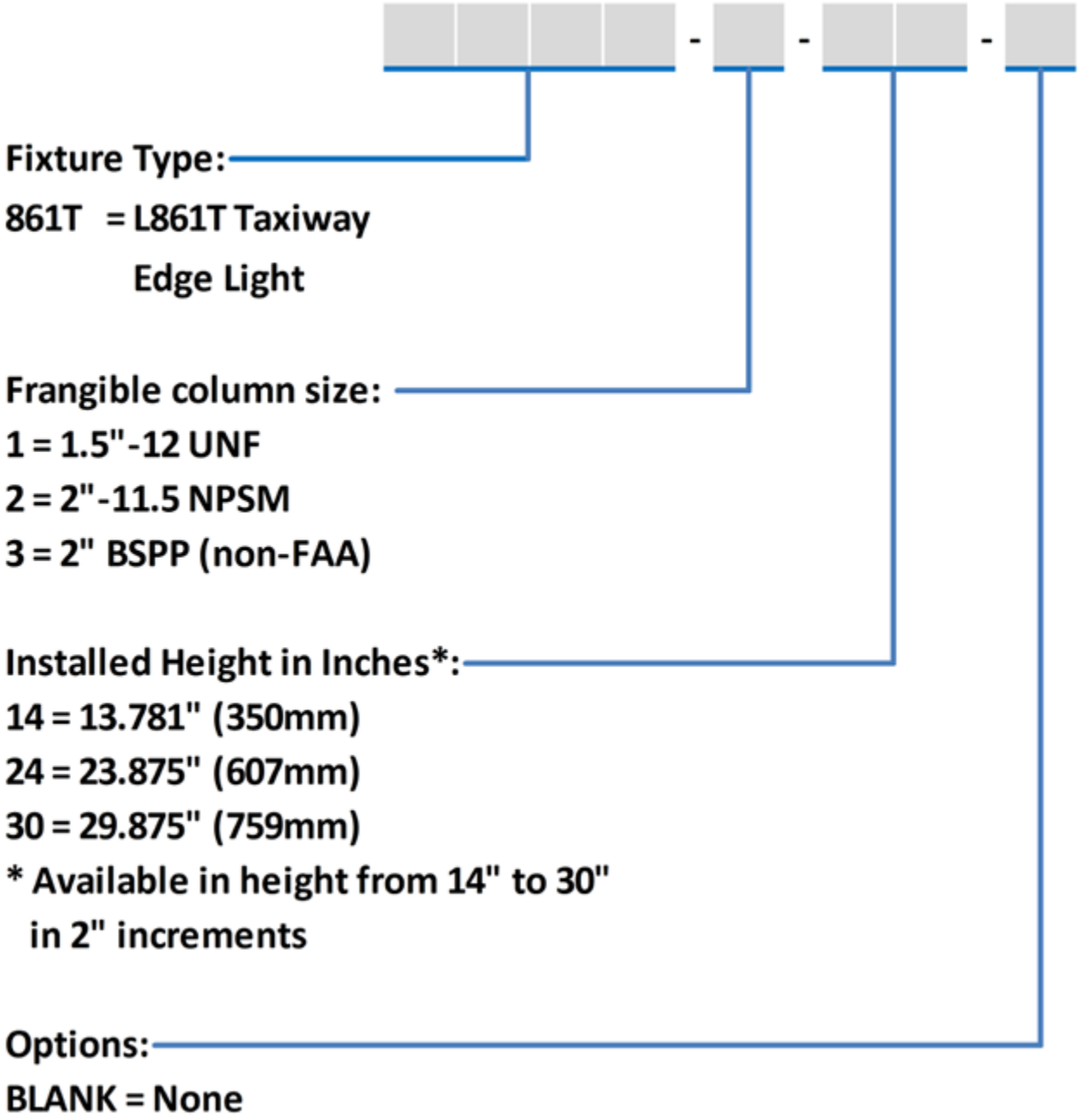
MITL: NAVAIR (blue globe), P/N 861T - _ - _ _ - _

Refer to NAVAIR 51-50AAA-2 (latest) for taxiway lighting standards spacing.

Refer to UFC 3-535-01 (latest) for taxiway lighting standards installation.

6.3 Part Numbers:

Table 1, MITL



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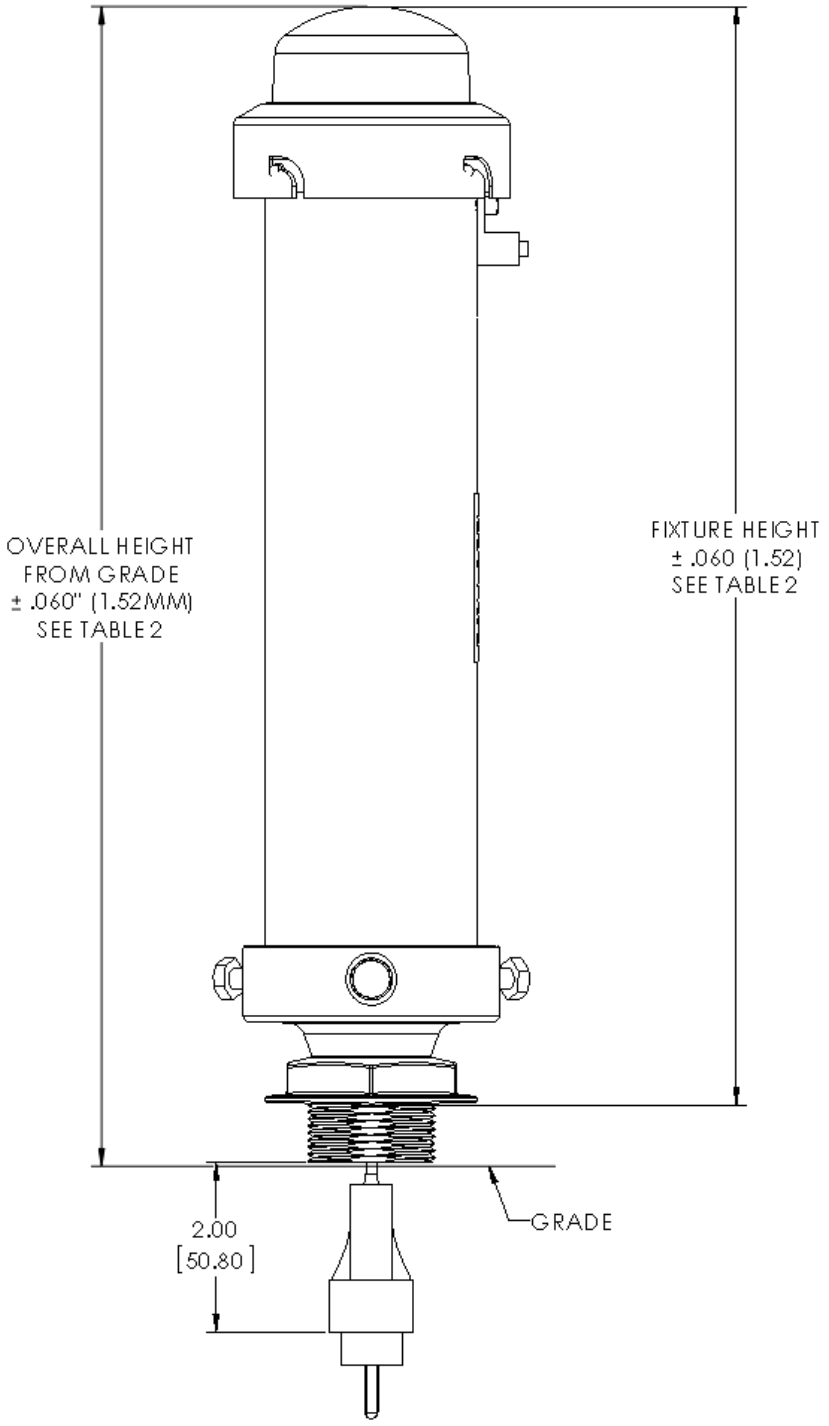


FIGURE 1
Height Dimensions (Standard Height fixture shown)

Nominal Fixture Height, inches (mm)	Fixture Installed Height in Base Plates AP1935, AP1932 or AP1932BSP at Grade, inches (mm)	Fixture Height From Frangible Coupling Shoulder, inches (mm)
14.0 (355.6)	13.78 (350)	12.75 (323.9)
16.0 (406.4)	15.88 (403)	15.04 (382.0)
18.0 (457.2)	17.88 (454)	17.04 (432.8)
20.0 (508.0)	19.88 (505)	19.04 (483.6)
22.0 (558.8)	21.88 (555)	21.04 (534.4)
24.0 (609.6)	23.88 (606)	23.04 (585.2)
26.0 (660.4)	25.88 (657)	25.04 (636.0)
28.0 (711.2)	27.88 (708)	27.04 (686.8)
30.0 (762.0)	29.88 (759)	29.04 (737.6)

TABLE 2
Fixture Heights

7 Installation

NOTICE

WARNING:

MITL foundations/pad and their design are the responsibility of the installer and/or airport and recommendations/suggestions herein are for guidance only. Transformer housing and base plates, series isolation transformers, primary connector kits, heat shrink kits, series loop primary wire, counterpoise cable/wire, grounding rods, ground wire and connectors, base plate bolts are not included as part of the MITL. Additionally, the electrical power originating from the CCR and any electrical equipment required to bring utility power or generator power to the CCR is the responsibility of the installer and/or airport. Underlined items may be ordered from Crouse-Hinds Airport Lighting.

a. Refer to your agency's installation and fixture spacing recommendations (see each agency listing in Section 6.2, "Fixture Type/Color and Agency Compliance") and/or your airport construction plans.

DANGER

DANGER:

Lock out electrical power to the series loop that will power the MITL fixture at its source before attempting any electrical connections/splices per your safety procedures.

IMPORTANT

WARNING:

Check the MITL fixture for shipping damage upon arrival and in all cases, check for damage prior to installation.

b. A list of tools which can help during installation are referenced in Section 5, "Recommended Test Equipment and Tools". Figure 2 indicates the name of the fixture parts referenced in the instructions below.

c. Check the fixture part number before installation to be sure it will be installed at the correct location.

d. Be sure the correct series isolation transformer size is installed for the fixture; minimum 30/45 watt, 6.6A secondary.

e. Be sure isolation transformer secondary receptacle is properly secured to the base plate or stake mount hub.

f. Be sure the base plate or stake mount hub size is correct for the frangible coupling for the fixture to be installed. Be sure base plates bolts are torqued and are secured to the L-867 per manufacturer's recommendations, or stake mounts are installed to the proper depth. Reference FAA AC 150/5340-30 (latest) "Design and Installation Details for Airport Visual Aids", or your agency's and/or airport's construction specifications for guidance.

g. Apply anti-seize to either the frangible coupling threads or hub threads, fully covering the threads.

IMPORTANT

WARNING:

Failure to apply anti-seize at installation will result in impossible/ to near impossible removal of a frangible coupling from a threaded hub over time.

h. Plug the fixture's L-823 plug into the series isolation transformer secondary receptacle located at the base plate or stake hub. Do not tape or apply shrink tubing to this connection. Note; the internal power cord is sized to an intentional length to help facilitate an electrical disconnect from the isolation transformer secondary if the fixture is sheared-off at its frangible coupling.

i. Loosen the leveling hex bolts (use a 7/16 or 11mm socket/wrench) on the fixture column/housing (to prevent the power cord from twisting inside the column), then screw the frangible coupling (with column attached) until its shoulder bottoms-out against the hub. Note; the frangible has a hex feature that will accommodate a 2 inch (50.8 mm) open end wrench.

j. Tighten the previously loosened fixture column/housing bolts to 120 in-lbs, +/-5 in-lbs (9.04 +/- .565 Nm).

k. If the fixture requires leveling, before tightening the previously loosened fixture hex bolts, do the following: Place a post level (Kapro model 341 or equivalent) around the body of the MITL fixture and secure with the attached strap. Grasp the housing and slowly tighten each leveling hex bolt until the bubbles are in the center of the level. Torque the fixture hex leveling bolts to the proper torque and remove the level.

l. Return power to the circuit per your safety procedures.

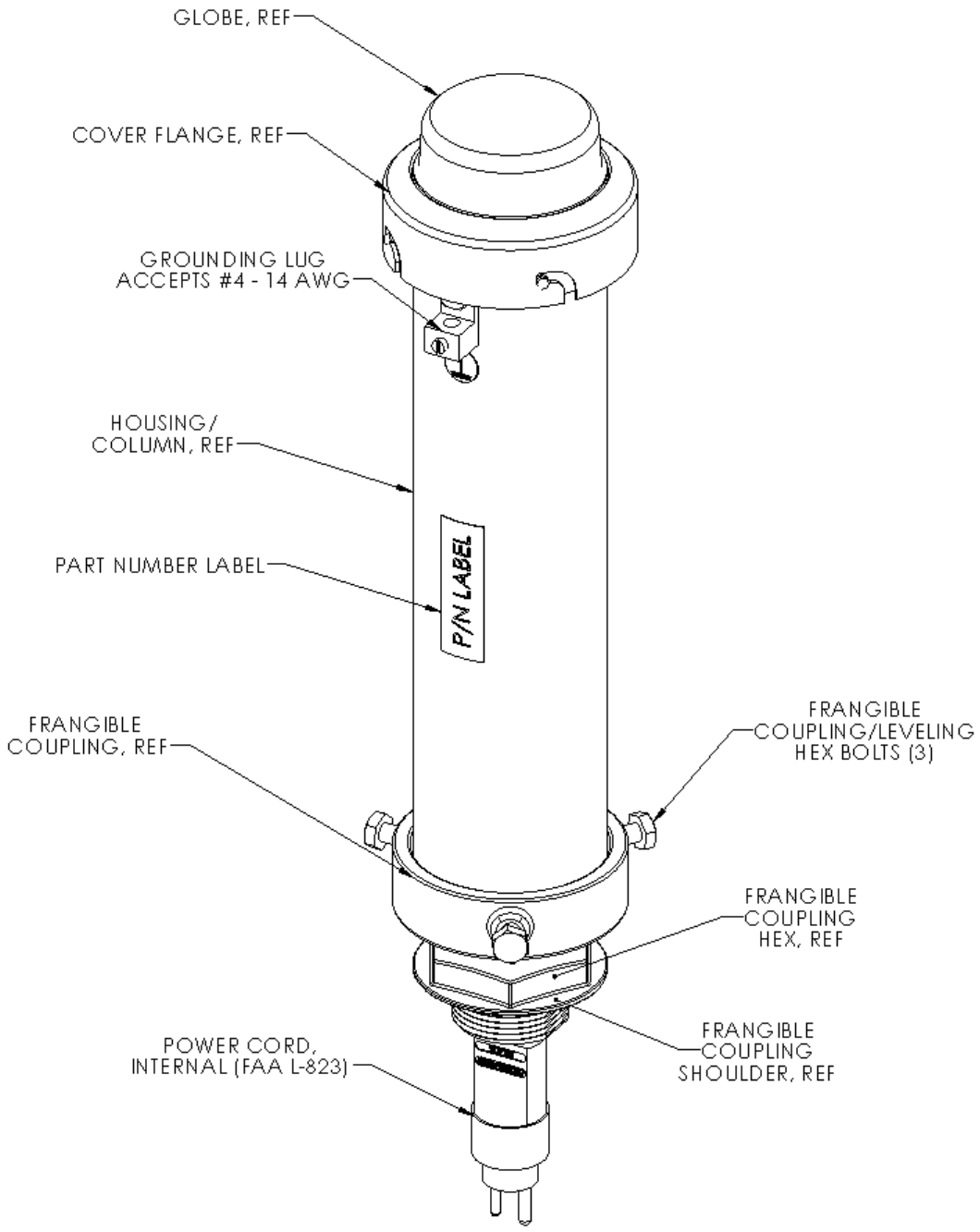


FIGURE 2

Fixture Parts Referenced in Installation Instructions

8 Maintenance

8.1 General

The preferred method of maintaining a light unit is to periodically replace the unit and return it to the maintenance shop for renovation. Work on electrical circuits should only be performed by qualified electricians with a working knowledge of airfield lighting circuits. It is recommended that field servicing be limited to cleaning the globe as described in section 8.3, re-leveling the fixture as described in section 8.4 and semi-annually checking the fixture frangible coupling/fixture leveling bolt torque. Users should also reference FAA AC 150/5340-26 (latest), Maintenance of Airport Visual Aid Facilities" for their recommended practices for runway and taxiway edge lighting systems. A list of tools which can help during maintenance are referenced in Section 5, "Recommended Test Equipment and Tools". Figures **3, 4, 5 and 6** will aid in part identification, and Tables **3, 4 and 5** in replacement part number.

8.2 Recommended Spares

The number of recommended spare fixtures is 2% of every type installed at the airfield. If the quantity for each type is less than 50, than at least one fixture of every type. The number of individual spare parts should be at least 3% of the total fixtures installed at the airfield, with 3% of each different globe color type in use at the airfield. This number may vary greatly if aggressive snow removal operations occur.

WARNING:

IMPORTANT

Do not open any light fixture unless the warranty period has expired. Opening a light fixture will void the warranty. Contact vendor during warranty period for issues/concerns.

8.3 Cleaning the Globe

The globe exterior may be cleaned with water or a good glass cleaner to remove any dirt or bird droppings residue.

8.4 Re-Leveling the Fixture

If the fixture requires re-leveling (levelness should be checked when servicing fixtures, or on a semi-annual basis when checking fixture hex bolts torque), level with a post level (Kapro model 341 or equivalent) around the body of the MITL fixture and secure with the attached strap. Loosen the leveling hex bolts (see Figure 2) (use a 7/16 or 11 mm socket/wrench]) on the fixture housing. Grasp the housing and slowly tighten each leveling hex bolt until the bubbles are in the center of the level. Torque the fixture leveling bolts to the proper torque (120 +/- 5 in-lbs [13.5 +/- .565 Nm]) and remove the level.

DANGER

DANGER:

Lock out electrical power to the series loop that will power the MITL fixture at its source before attempting servicing to the fixture.

DANGER

DANGER:

Do not remove the fixture from the base plate or stake mount while the fixture is powered. Dangerous voltage may be present on the primary and secondary sides of the isolation transformer.

IMPORTANT

WARNING:

Every time a fixture is opened, it's globe gasket should be replaced. Globe gaskets may develop a permanent deformation over time. Failure to replace it when the fixture is opened may result in a fixture leak. You may apply silicon grease to the globe gasket top surface or the globe cover interior surface that will contact the globe gasket to prevent friction when tightening. Use only the Gasket listed in table 3 due to thickness & durometer.

8.5 Replacing the Globe

It may be necessary to replace the globe due to breakage or etching of globe from wind-blown sand. Lockout power to the fixture. The globe cover is a twist lock type connection, Un-twist the globe cover (this operation may need to be done in your maintenance facility using a strap wrench) and remove the globe and globe gasket. Lift the LED/power supply and EMI shield assembly out of the column/housing and un-plug the power cord leads from the power supply. Use caution on broken globes due to sharp edges. All pieces of the broken globe should be removed from the column/housing interior. Pieces of broken globe should also be removed from around the area of the pavement to minimize foreign object damage (FOD) on the airfield. Discard the old globe gasket and globe. Re-connect the leads of the power cord to the power supply and reinstall the LED/power supply and EMI shield assembly in the column/housing (note: it may be necessary to replace the thermal tape, item 15 in table 3, before reinstalling the LED/power supply and EMI shield assembly if it appears ripped or damaged). Place a new globe/gasket assembly (spare P/N 50760) on top of the LED/power supply and EMI shield assembly. Apply a small amount of silicone grease to the gasket, see 'IMPORTANT' notice about silicon grease above 8.5. Line up globe cover over dome so that the gasket is centered in

the hole in the globe cover. Twist globe cover back into the locking position, globe cover should move smoothly into locking position if assembled correctly. Return power to the fixture per your safety procedures.

8.6 Replacing the Frangible Coupling or Power Cord

It may be necessary to replace the frangible coupling and possibly the column/housing due to damage from snow removal operations, vehicle damage or aircraft damage. Lockout power to the fixture. Unplug the fixtures L-823 power plug from the isolation transformer's L-823 secondary receptacle. Disconnect the leads of the L-823 power cable from the power supply, see section 8.5 for power supply removal. Remove the broken frangible coupling half with the L-823 power cord from the column/housing and discard. Check the fixture column/housing for damage or deformation. Remove the broken frangible half from the base plate or stake hub (note: for power cord replacement where frangible coupling isn't broken, follow the above steps and remove the frangible couplings from the base plate for easier removal). Attach the new frangible coupling to the column/housing with new hex head bolts (MITL frangible coupling spare, P/N: 50761 comes with attached L-823 power cord already installed). Do not fully tighten at this time. Install the fixture per instructions in Section 7g. through l. If fixture column/housing is damaged, it is recommended to replace the entire fixture.

8.7 Replacing the LED/Power Supply and EMI shield Assembly

The LED/Power supply and EMI shield assembly has the color of the LED indicated by the color of the board itself. Additionally, all LED/power supply assemblies have their part number marked on its side. Lockout power to the fixture. The globe cover is a twist lock type connection, Un-twist the globe cover (this operation may need to be done in your maintenance facility using a strap wrench) and remove the globe and globe gasket. Lift the LED/power supply and EMI shield assembly out of the column/housing and un-plug the power cord leads from the power supply. Discard the old globe gasket and LED/power supply and EMI shield assembly. It may be necessary to replace the thermal tape, item 15 in table 3, before installing a new LED/power supply and EMI shield assembly if it appears ripped or damaged, if thermal tape appears damaged, replace at this time. Connect the leads of the L-823 power cable to the new LED/power supply and EMI shield assembly. Install the new LED/power supply and EMI shield assembly into the column/housing. Install a new globe gasket onto the flange of the globe and apply a small amount of silicone grease to the gasket, see 'IMPORTANT' notice about silicon grease above 8.5. Line up globe cover over dome so that the gasket is centered in the hole in the globe cover. Twist globe cover back into the locking position, globe cover should move smoothly into locking position if assembled correctly. Return power to the fixture per your safety procedures.

WARNING

WARNING:

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

NOTICE

WARNING:

A grounded ESD Wrist Strap should be worn by personal working on or handling fixture power supplies or LED/Heat sink assemblies. ESD Wrist Straps, also known as anti-static wrist straps, are used to prevent electrostatic discharge (ESD) by safely grounding a person working with electronic equipment.

IMPORTANT

WARNING:

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

CAUTION

CAUTION:

Power supply is hot (temperature) when the fixture is energized and remains hot for a short time after the fixture is turned off.

9 Figures and Tables

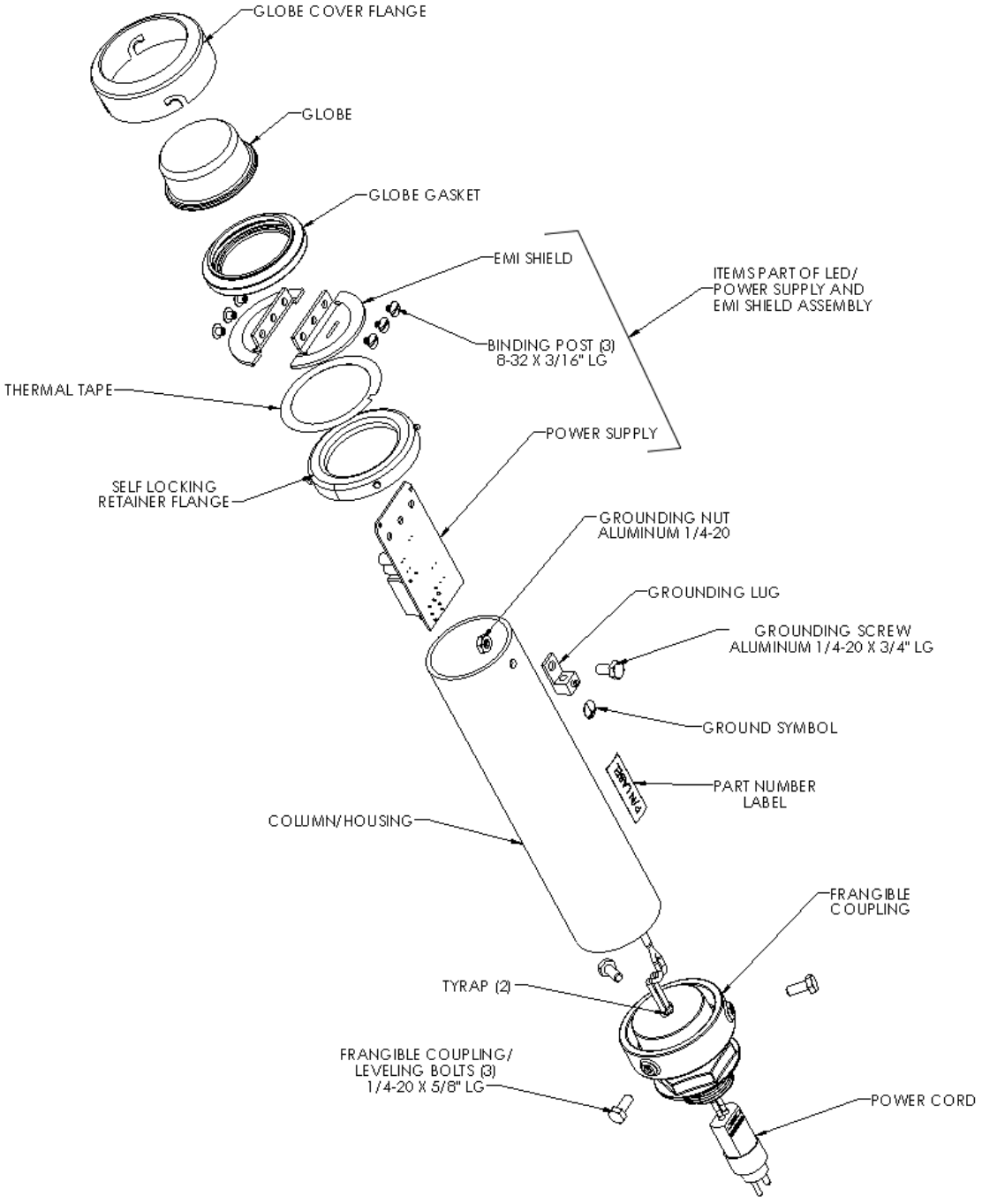


FIGURE 3
MITL Fixture Parts Identification

ITEM NUMBER	PART	PART NUMBER	DESCRIPTION/USE or QUANTITY
1	GLOBE COVER FLANGE	50734	1 PER FIXTURE
2	COLUMN/HOUSING	SEE TABLE 4	1 PER FIXTURE
3	FRANGIBLE COUPLING, 1-1 1/2" UNF - 12	50736-1	1 PER FIXTURE SEE TABLE 1, 2, OR 3
4	FRANGIBLE COUPLING, 2" - 11 1/2 NPSM	50736-2	
5	FRANGIBLE COUPLING, 2 - 11 BSPP	50736-3	
6	POWER CABLE	SEE TABLE 4	1 PER FIXTURE SEE TABLE 1, 2, OR 3
7	POWER SUPPLY	50589-B	1 PER FIXTURE
8	SELF LOCKING RETAINER FLANGE	50733	1 PER FIXTURE
9	EMI SHIELD	50735	2 PER FIXTURE
10	GLOBE	50732-B	1 PER FIXTURE
11	1/4-20 X 5/8" LONG 18-8 SST HEX SCREW	10000-0573	3 PER FIXTURE
12	GROUND TERMINAL, SOLDERLESS, #4-14, ALUMINUM	10047-3141	1 PER FIXTURE REFERENCE FIGURE 3 (USE HARDWARE 10000-0590 GROUND SCREW, AND 10K03-025A GROUND NUT TO ATTACH TO COLUMN/HOUSING)
13	TYRAP	10037-0556	2 PER FIXTURE, FOR POWER CORD STRAIN RELIEF
14	BINDING POST #8-32 X 3/16" LONG	10000-0618	3 PER FIXTURE
15	THERMAL TAPE	50396	1 PER FIXTURE

ITEM NUMBER	SPARE PART	PART NUMBER	DESCRIPTION/USE or QUANTITY
17	GLOBE AND GLOBE GASKET	50760	GLOBE WITH GASKET ATTACHED
18	FRANGIBLE COUPLING AND POWER CORD	50761	FRANGIBLE COUPLING WITH POWER CORD SET TO LENGTH WITH STRAIN RELIEF ATTACHED
19	LED/POWER SUPPLY AND EMI SHIELD	50762	LED/POWER SUPPLY WITH EMI SHIELDS ATTACHED

TABLE 3
MITL Parts Identification, Figure 3

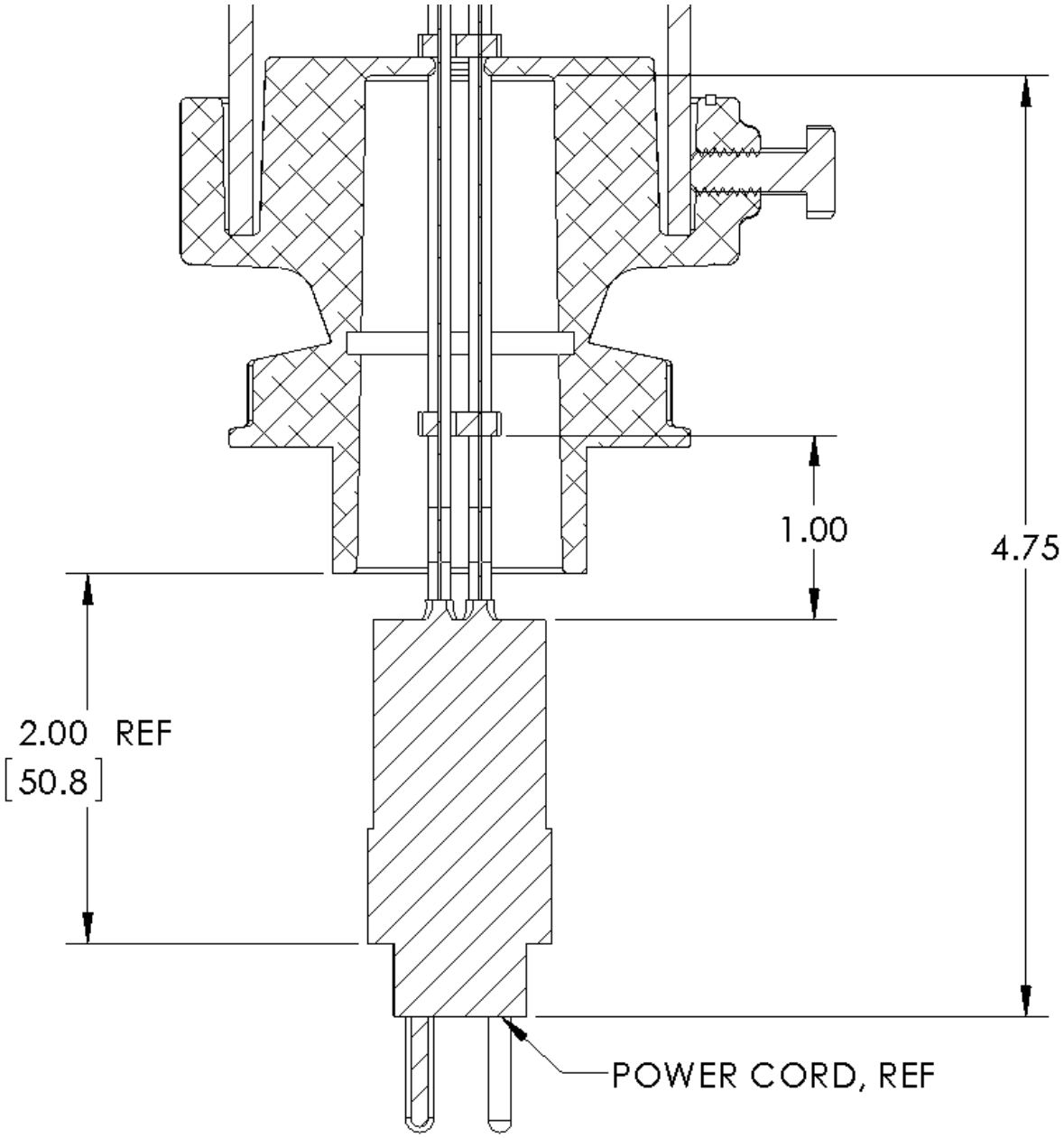


FIGURE 4
Power Cord Length from Connector Housing

Instruction Manual
MITL
AP1 Series

MITL TOP LEVEL P/N	INSTALLED HEIGHT	COLUMN P/N	COLUMN DESCRIPTION	FIXTURE HEIGHT .060" (1.52MM)	POWER CABLE P/N*	POWER CABLE DESCRIPTION
861T-_-14-_	13.78" (350MM)	50737-14	COLUMN (STD. HT)	12.75" (324MM)	40919-1	POWER CABLE (STD. HT)
861T-_-16-_	15.88" (403MM)	50737-16	COLUMN (16" HT)	15.04" (382MM)	40919-2	POWE CABLE (16" HT)
861T-_-18-_	17.88" (454MM)	50737-18	COLUMN (18" HT)	17.04" (433MM)	40919-2	POWE CABLE (18" HT)
861T-_-20-_	19.88" (505MM)	50737-20	COLUMN (20" HT)	19.04" (484MM)	40919-2	POWE CABLE (20" HT)
861T-_-22-_	21.88" (555MM)	50737-22	COLUMN (22" HT)	21.04" (534MM)	40919-2	POWE CABLE (22" HT)
861T-_-24-_	23.88" (606MM)	50737-24	COLUMN (24" HT)	23.04" (585MM)	40919-2	POWE CABLE (24" HT)
861T-_-26-_	25.88" (657MM)	50737-26	COLUMN (26" HT)	25.04" (636MM)	40919-3	POWE CABLE (26" HT)
861T-_-28-_	27.88" (708MM)	50737-28	COLUMN (28" HT)	27.04" (687MM)	40919-3	POWE CABLE (28" HT)
861T-_-30-_	29.88" (759MM)	50737-30	COLUMN (30" HT)	29.04" (738MM)	40919-3	POWE CABLE (30" HT)

* DO NOT CUT POWER CORD

TABLE 4
Power Cord / Column Description

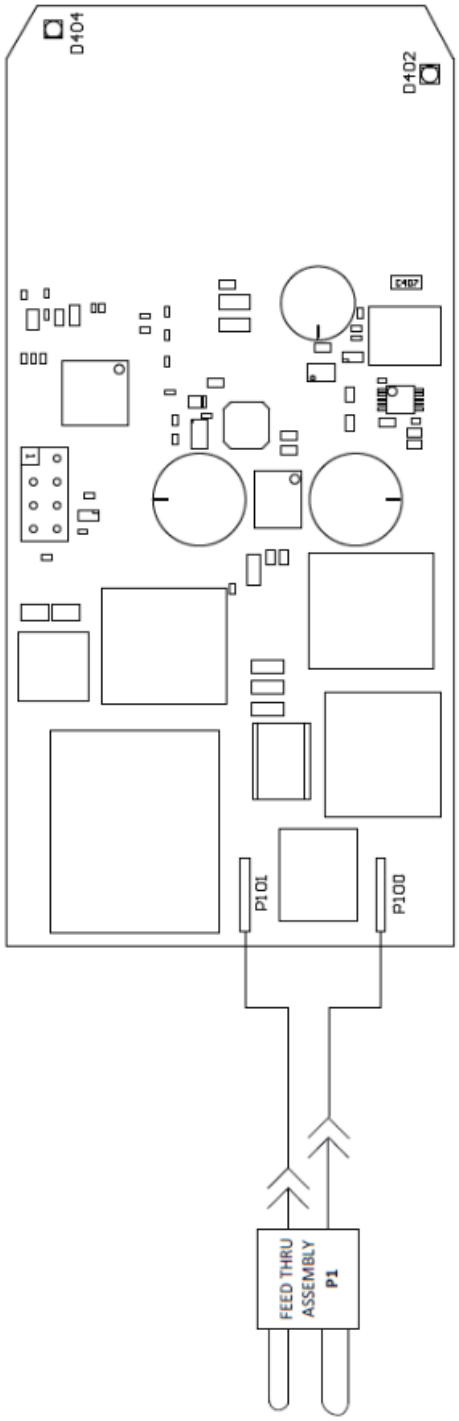


FIGURE 5
Power Supply Connections

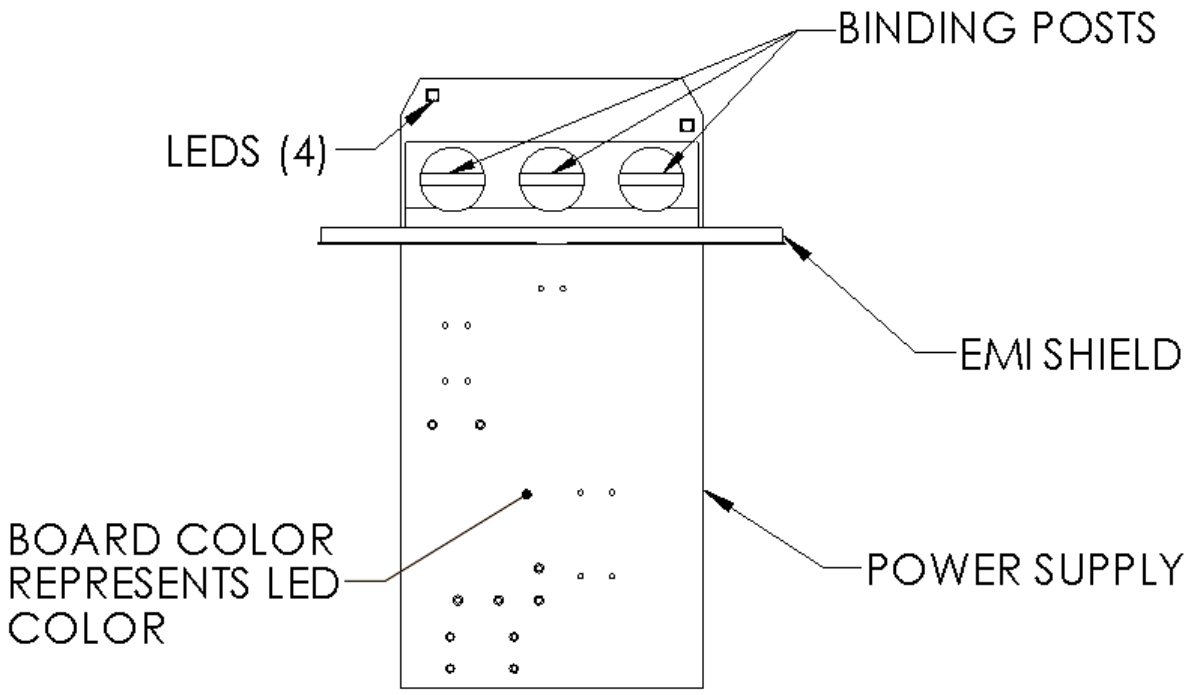


FIGURE 6
Part Number 50762, Omni Blue Assembly
LED/POWER SUPPLY AND EMI SHIELD ASSEMBLY
Reference Sections 8.5, 8.7, and 8.8

FAA MITL RECOGNIZED/ETL CERTIFIED FIXTURE TYPE*						
TYPE	LIGHT DIRECTION & COLOR		EATON PART NUMBER	LED/POWER SUPPLY AND EMI SHIELD REPLACEMENT P/N, FIGURE NUMBER	WATTAGE	GLOBE PART NUMBER
L-861T	OMNI-DIRECTIONAL:	BLUE	861T-_-__-_	50762/ FIGURE 6	25.14	50732-B

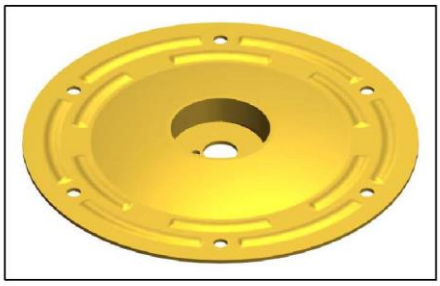
* FRANGIBLE COUPLING -3 (50736-3 2" BSPP) ARE NOT ETL CERTIFIED

ICAO, NATO STANAG 3316, CANADA TP312 5TH EDITION, U.S. MILITARY UFC 3-535-01, U.S. NAVY NAVIAR 51-50AAA-2 MITL FIXTURE TYPE						
TYPE	LIGHT DIRECTION & COLOR		EATON PART NUMBER	LED/POWER SUPPLY AND EMI SHIELD REPLACEMENT P/N, FIGURE NUMBER	WATTAGE	GLOBE PART NUMBER
TAXIWAY	OMNI-DIRECTIONAL:	BLUE	861T-_-__-_	50762/ FIGURE 6	25.14	50732-B

TABLE 5
LED/Power Supply and EMI Shield Assembly, Globe Part Numbers, and Fixture Wattage

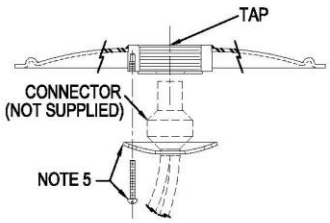
10 Accessories

JAQUITH INDUSTRIES, INC.
Syracuse, New York 13205 (315) 478–5700 FAX: (315) 478–5707 www.jaquith.com

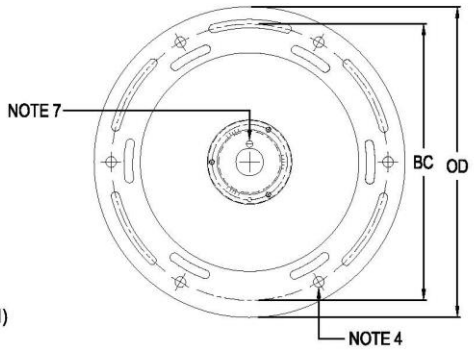


L-867 Corten Base Plate

L-867 Corten Base Plate



1. Approved and Certified to FAA Advisory Circular
   AC 150/5345-46
   Size: B=12", D=16"
2. Material: Corten A606 steel
3. Finish: Aviation yellow powder coat
4. (6) 7/16" Ø equally spaced, thru holes
5. Base plate shipped with:
   Neoprene gasket:
   AP1932/1935 12" (10530287)
   AP2932/2935 16" (10530281)
   Foam gasket:
   AP1932AK/AP1935AK 12" (10532042)
   Hardware packup #6120 which contains:
   (1) 3 hole cable clamp (8089)
   (3) #10-24 x 1 1/2" SS machine screws (10670781)
6. Grounded version available (see p.K-01f)
   Add "G" suffix to part number
7. (1) 1/4" Ø Weep Hole Standard
   Add "AK" suffix to P/N for baseplate w/o weep hole,
   Foam Gasket & 6120 pack up (Alaskan Application)
8. Other thread types available (e.g. 2"-11 BSP)



TYPE	OD	BC	TAP
AP1932 12" L867B	12" [304.8]	10.25" [260.4]	2" NPS [50.8]
AP1935 12" L867B	12" [304.8]	10.25" [260.4]	1 1/2"-12 NF [38.1]
AP2932 16" L867D	16" [406.4]	14.25" [362]	2" NPS [50.8]
AP2935 16" L867D	16" [406.4]	14.25" [362]	1 1/2"-12 NF [38.1]

[ ] = dimensions in metrics; mm.

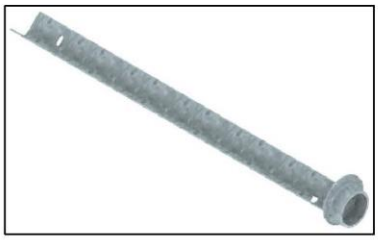
C-01f (rev 1)

ACCESSORY A

Recommended Base Plates

The above 12-inch (304.8 mm) base plates for FAA L-867 Size B bases are available from Crouse-Hinds Airport Lighting. The note 8. 12-inch base plate part number is AP1932BSP. Check with Crouse-hinds Airport Lighting for the availability of all 16-inch (406.4mm) versions for FAA L-867 Size D bases.

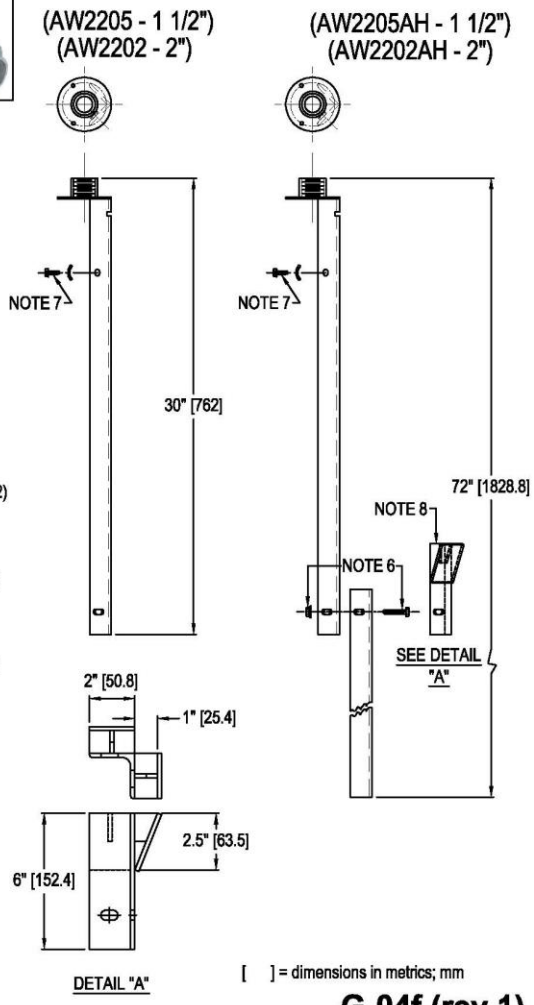
JAQUITH INDUSTRIES, INC.
Syracuse, New York 13205 (315) 478-5700 FAX: (315) 478-5707 www.jaquith.com



Mounting Stake

Mounting Stake

1. Approved and Certified to FAA Advisory Circular AC-150/5345-46 By Light Manufacturers
2. Mounting stakes are galvanized to ASTM-A123/A123M-02
3. AW2202AH and AW2205AH meet Canadian requirements
4. Threads are clean and uncoated
5. Shipped with:
   Hardware packup #6119 which contains:
   (1) 2 hole cable clamp (8094)
   (2) #10-24 x 1 3/4" SS machine screws (10661012)
6. For AW2202AH and AW2205AH
   Additional hardware packup includes:
   (2) 3/8"-16 x 1 1/4" SS hex head bolts (10650202)
   (2) 3/8"-16 Wiz Lock Nuts (10681784)
   Note: When pullout tangs are ordered, stakes are shipped with:
   (2) 3/8"-16 x 1 1/2" SS hex head bolts (10650205)
7. OPTIONAL:
   (1) Ground clip (AW0923) with
   (1) 1/4"-20 x 3/4" self tapping screw (10662047)
8. Canadian Pullout Tangs



G-04f (rev 1)

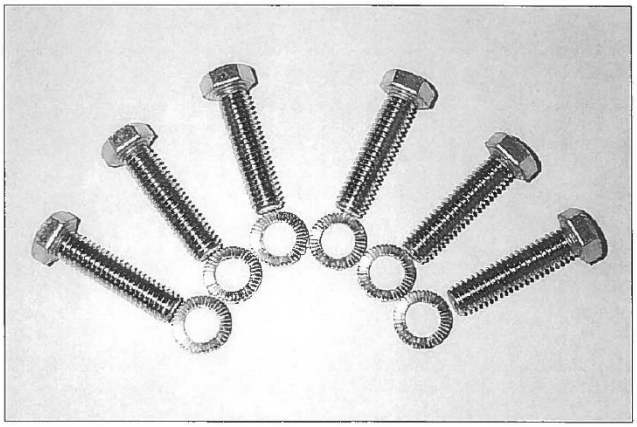
ACCESSORY B

Mounting Stakes

The above mounting stakes, AW2205 and AW2202 are available from Crouse-Hinds Airport Lighting. Check with Crouse-hinds Airport Lighting for the availability of other versions.

JAQUITH INDUSTRIES, INC.
Syracuse, New York 13205 (315) 478-5700 FAX: (315) 478-5707 www.jaquith.com

BOLT SET WITH LOCKWASHERS (STAINLESS STEEL)



TYPICAL BOLT SET WITH LOCKWASHERS

1. Bolt sets comply with the requirements of FAA Advisory Circular 150/5345-42F

2. All bolts are fully threaded 3/8-16 Hex Head Cap Screws.

3. Lockwashers are 2-piece "wedge-locking" style glued together in pairs for ease of installation.

4. Material for the bolts is grade 304 Stainless Steel

5. Material for the lockwashers is grade 316 Stainless Steel

6. Bolt sets come packed (6) in a plastic envelope with an installation instruction sheet enclosed.

BOLT SET PART NUMBERS	
JAQUITH PART NUMBER	BOLT LENGTH
6100	1" [25.4]
6101	1 1/4" [31.7]
6102	1 1/2" [38.1]
6103	1 3/4" [44.4]
6104	2" [50.8]
6105	2 1/4" [57.1]
6106	2 1/2" [63.5]
6107	2 3/4" [69.8]
6108	3" [76.2]
6109	3 1/2" [88.9]
6110	5" [127.0]
6111	4" [101.6]
6130	6" [152.4]

[ ] = dimensions in metrics; mm

J-06f (rev 1)

.

ACCESSORY C

Bolt Kits, Base Plate to Base

These base plate to FAA L-867 base attachment bolts are available from Crouse-Hinds Airport Lighting. Base surfaces and their mounting holes must be degreased, clean and dry prior to bolt installation. Bolt threads should be fully coated with anti-seize (marine grade preferred) that has a K factor (torque coefficient) of 0.18. These bolts can then be torqued (do not use impact wrenches) to 225 in-lbs – 0, +10% (25.42 -, +10% Nm) in a "star" pattern. Immediately re-torque the bolts in the same "star" pattern. Check torque/re-torque all bolts within 2 weeks of initial installation. Bolt torque should then be checked per a regular maintenance schedule per FAA AC 150/5340-26 (latest) recommendations. Note, torque value based on the bolt and washer type in Accessory C, and anti-seize recommended. New bolts and lock washers shall be used each time a base plate is removed from its base.