

Airport**Lighting**Company
An ISO 9001:2015 Certified Company

OWNER'S MANUAL



L-880 (L) /L-881 (L)
LED Precision Approach Path Indicator (PAPI)



LED PAPI L-880(L)/L-881(L) Owner's Manual

**ETL Certified Conformance with:
FAA AC 150/5345-28 and EB67**



U.S. Patent 11,260,991

Manufactured by:
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L-880(L) /L-881(L) LED Precision Approach Path Indicator (PAPI)



U.S. Patent 11,260,991

Compliances

FAA: L-880(L) / L-881(L) AC 150/5345-28 (Current Edition) ETL Certified

ICAO: PAPI Annex 14, Volume 1 (Current Edition)

T/C: PAPI / APAPI Transport Canada TP 312 par. 5.3.16.12 and Appendix 5B, Figure B-19



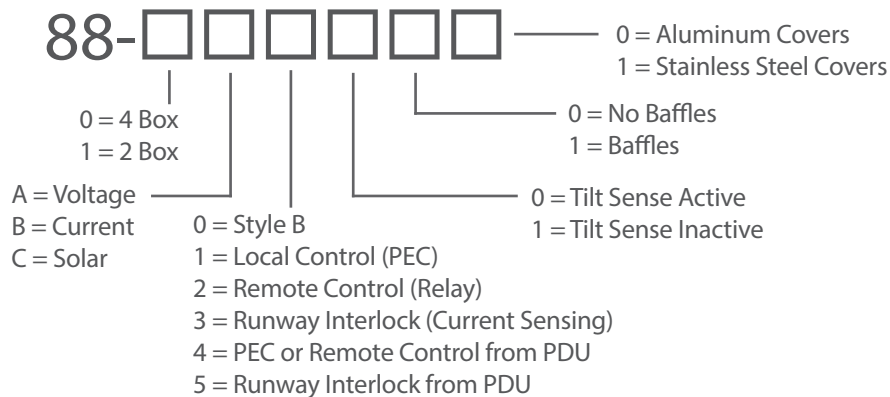
Application

This system enhances safety by providing visual approach slope guidance to assist the pilot of an aircraft in flying a stabilized approach

Key Features

- Estimated Life of LEDs > 150,000 hours at full intensity
- LED Display indicates angle and status without opening
- Redundant Digitally Controlled Lens Heaters
- 89 Max VA per light unit with heater active
- Compact and Light Weight (less than 40 lbs per LHA)
- Only one Liquid Tight conduit per light unit
- Optical Lens hardened against sandblast
- Optical Chamber Sealed against moisture and dust
- Streamlined mounting leg assemblies
- Retrofits directly on ALC incandescent installations
- External Junction Box (PDU) configurations available
- FAA Class 2: -55° C

General Catalog Numbers





Specifications

Replacement Parts

Part #	Description
88-00100	Control / Tilt Board
88-00250	LED Light Engine Kit
88-00300	RS485 Communications Board
88-00400	Power Conditioning Board
88-04000	LED PAPI Top Assy with PEC
88-00600	Display Board
88-00700	Power Supply, Style A
88-00005	Heated Lens Assembly
44-00175	Power Supply, Style B
59-E	Frangible Coupling

Electrical Characteristics, Style A

Input Power 108-265VAC 50/60Hz	Lens Heater Inactive	Lens Heaters Active
L-880 (4 Box)	200 VA	260 VA
L-881 (2 Box)	100 VA	130 VA

Electrical Characteristics, Style B

Using a 200W Isolation Transformer	Lens Heater Inactive	Lens Heaters Active
L-880(L) (4 Box)	276 VA	356 VA
L-881(L) (2 Box)	138 VA	178 VA



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Have Questions? Contact Us:



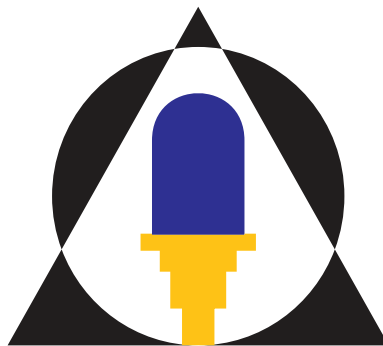
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Statement of Warranty

Warranty – LED Light Source Products FAA EB67D Products manufactured by Airport Lighting Company (ALC) which use LEDs as a light source are warranted against mechanical and physical defects in design or manufacture for a period of 2 years from date of installation per the applicable FAA Advisory Circular and against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years per FAA EB67D. ALC will correct such defects by repair or replacement, at its option, provided the products have been properly handled and stored prior to installation, properly installed and operated after installation, and provided further that the Buyer has notified ALC in writing within the warranty period and within a reasonable time after notice of such defects. Refer to handling, storage, installation and operational instructions for proper procedural guidance that must be followed to maintain warranty provisions.

This warranty is in effect for the specified term as long as the equipment, in ALC's judgment, has not been altered in such a way as to affect the equipment adversely, subject to accident, negligence, improper storage, and has been operated and maintained in accordance with accepted FAA guidelines as described in AC 150/5340-26 and ALC's published operational guidelines.

ALC reserves the right to examine products about which a claim has been made. Equipment must be presented in the same condition as when the defect was discovered. ALC also reserves the right to require the return of equipment to establish any claim.

Disclaimer: ALC's obligation under this warranty is limited to repair or replacement of defective equipment sold by ALC at no cost to Buyer. This does not include any other costs such as the cost of removal, shipping, or installation of the defective part or repaired or replaced product, including labor or any consequential damages of any kind. Warranty services provided under this agreement do not assure uninterrupted operations of LED illuminated equipment. ALC shall not be liable for any indirect or consequential damages.

ALC's liability under no circumstances will exceed its sales price of the products claimed to be defective. All transportation costs under this warranty are the responsibility of the purchaser. Replacement parts and/or equipment provided under this warranty are covered under the same terms until the expiration of the original warranty period that began upon the first installation of the equipment.

This is ALC's sole and exclusive warranty with respect to the equipment sold to the Buyer. There are no express or implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein.

ALC shall not be liable to the purchaser of this product or third parties for indirect or consequential damages, or for damages arising from the use of any options or parts other than those designated by ALC as approved products. Damage caused by lightning, flood and other natural or manmade causes are outside the scope of this warranty.



Theory of Operation

The Airport Lighting Company LED PAPI provides beneficial visual approach slope guidance to assist the pilot of an aircraft in flying a stabilized approach.

The FAA Type L-880 PAPI system consists of 4 Light Housing Assemblies (LHA) located adjacent to the origin of the glide path. Each LHA is installed at an offset from the desired glide path, which is midway between the central pair of LHAs. The outer pair are slightly more offset from the glide path than the inner pair. This configuration provides an increasing number of white signals as the incoming aircraft deviates above the intended glide path, and an increasing number of red signals as the incoming aircraft deviates below the desired glide path. An approach along the desired glide path will yield two red signals and two white signals.

The FAA Type L-881 PAPI system consists of 2 LHAs installed at angles equally above and below the glide path. An approach along the desired glide path will yield one red signal and one white signal.

The FAA Style A PAPI is designed for use with an AC voltage input. The ALC LED PAPI includes an electronic failsafe inclinometer to prevent operation if an LHA is raised between 0.5 and 1.0 degrees or lowered between 0.25 and 0.5 degrees from its set angle.

L-880

L-881

	TOO HIGH 4 - White 0 - Red		TOO HIGH 2 - White 0 - Red
	SLIGHTLY HIGH 3 - White 1 - Red		ON GLIDEPATH 1 - White 1 - Red
	ON GLIDEPATH 2 - White 2 - Red		TOO LOW 0 - White 2 - Red
	SLIGHTLY LOW 1 - White 3 - Red		
	TOO LOW 0 - White 4 - Red		

Electrical Characteristics, Style A

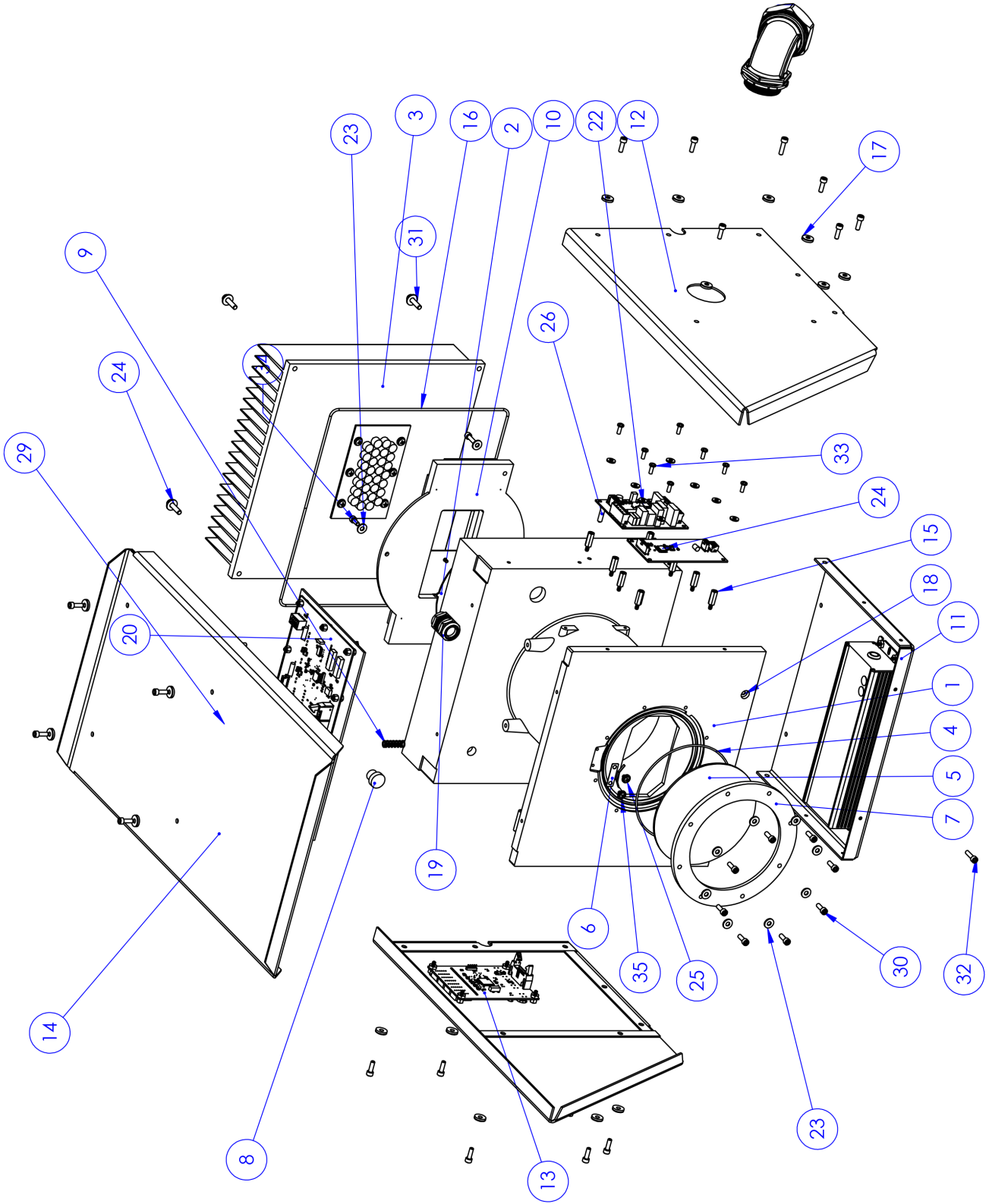
Input Power 108-265VAC 50/60Hz

L-880 (4 Box) Max 199 VA

L-880 (2 Box) Max 99 VA

LED PAPI LHA Assembly

Item No.	Part Number	Description	Qty.	Item No.	Part Number	Description	Qty.
1	88-00001	Sandcast housing	1	19	88-00008	Stainless Steel Submersible Cord Grip	1
2	88-00002	Intermediate Aperture	1	20	88-00100	Control and Tilt PCB	1
3	88-05000	Heatsink Assm	1	24	88-00300	Communication PCB	1
4	88-00004	EPDM O-Ring lens 1/16"	1	22	88-00400	Power Conditioning PCB	1
5	88-00005	Biconvex lens	1	23	99-00105	SS washer #8	11
6	88-00003	Spring clip for lens	1	24	99-00090	SS washer #6	7
7	88-00006	Retaining ring lens	1	25	99-00090	SS washer #6	10
8	88-00007	Gore vent	1	26	99-00286	10-32 x 2" cup point set screw	2
9	99-00261	Compression springs	3	27	88-00030	1-1/4" Liquid Tite Elbow	1
10	88-07000	Baffle box assembly	1				
11	88-01000	PSU & Bottom tray assembly	1	29	99-00257	Stainless steel socket head cap screw #10-32x 7/8"	3
12	88-02000	Left cover panel assembly	1	30	99-00258	Stainless steel socket head cap screw #8-32x 1/2"	26
13	88-03000	Right cover panel Assembly	1	31	99-00259	Stainless steel socket head cap screw #10-32x 3/4"	4
14	88-00024 (Primary LHA), 88-00025	Top Cover Assembly	1	32	99-00260	Stainless steel socket head cap screw #8-32x 5/8"	6
15	99-00262	Electronic spacer 6-32x 5/8"	8	33	99-00072	Stainless steel pan head screw #6-32x 3/8"	8
16	88-00009	EPDM O-Ring heatsinke 3/32"	1	34	99-00245	Stainless steel socket head cap screw #8-32x 3/8"	1
17	99-00263	Metal-Bonded Sealing Washer	20	35	99-00264	Stainless steel pan head screw #6-32x 1/4"	2
18	99-00105	Stainless steel washer #8	2				





Additional Part Numbers

72	L-867B Baseplate with 2" threaded hub
902	Floor Flange
59-E	2" Frangible Coupling Assembly (Includes 59-B Body, 59-R Compression Ring, 59-N Nut)
88-00033	Liquid Tight Receiver
88-00032	Liquid Tight Fitting, 1-1/4" Straight
88-8A25	2" EMT Compression Coupling
88-8A31	Threaded Rod Receiver
88-00045	Threaded Rod
99-00007	1/2-13 Hex Nut
99-00006	1/2-13 Flange Nut
88-00034	LHA LED Harness
88-00035	LHA RS485 Harness
88-00036	LHA Power Conditioning Harness
88-09010	Distribution Box, Primary
88-09020	Distribution Box, Secondary
88-09030	Power and Communication Cable
88-09040	PDU to Primary LHA Cable



Harnesses

88-00034

	88-00100	Color	88-00200
Run 1	J2-1	Gray	J1-6
Run 2	J2-2	Green/White	J1-5
Run 3	J2-3	Orange	J1-4
Run 4	J2-4	Green/White	J1-3
Run 5	J2-5	Yellow	J1-2
Run 6	J2-6	Green/White	J1-1
Run 7	J3-1	Red	J2-8
Run 8	J3-2	Green/White	J2-7
Run 9	J3-3	Black	J2-6
Run 10	J3-4	Green/White	J2-5
Run 11	J3-5	Violet	J2-4
Run 12	J3-6	Green/White	J2-3
Run 13	J3-7	White	J2-2
Run 14	J3-8	Green/White	J2-1

88-00035

	88-00100	Color	88-00300
Run 1	J1-1	Red	J9-1
Run 2	J1-2	Red/White	J9-2
Run 3	J1-3	Blue	J9-3
Run 4	J1-4	Blue/White	J9-4
Run 5	J1-5	Green	J9-5
Run 6	J1-6	Green/White	J9-6



Harnesses Continued

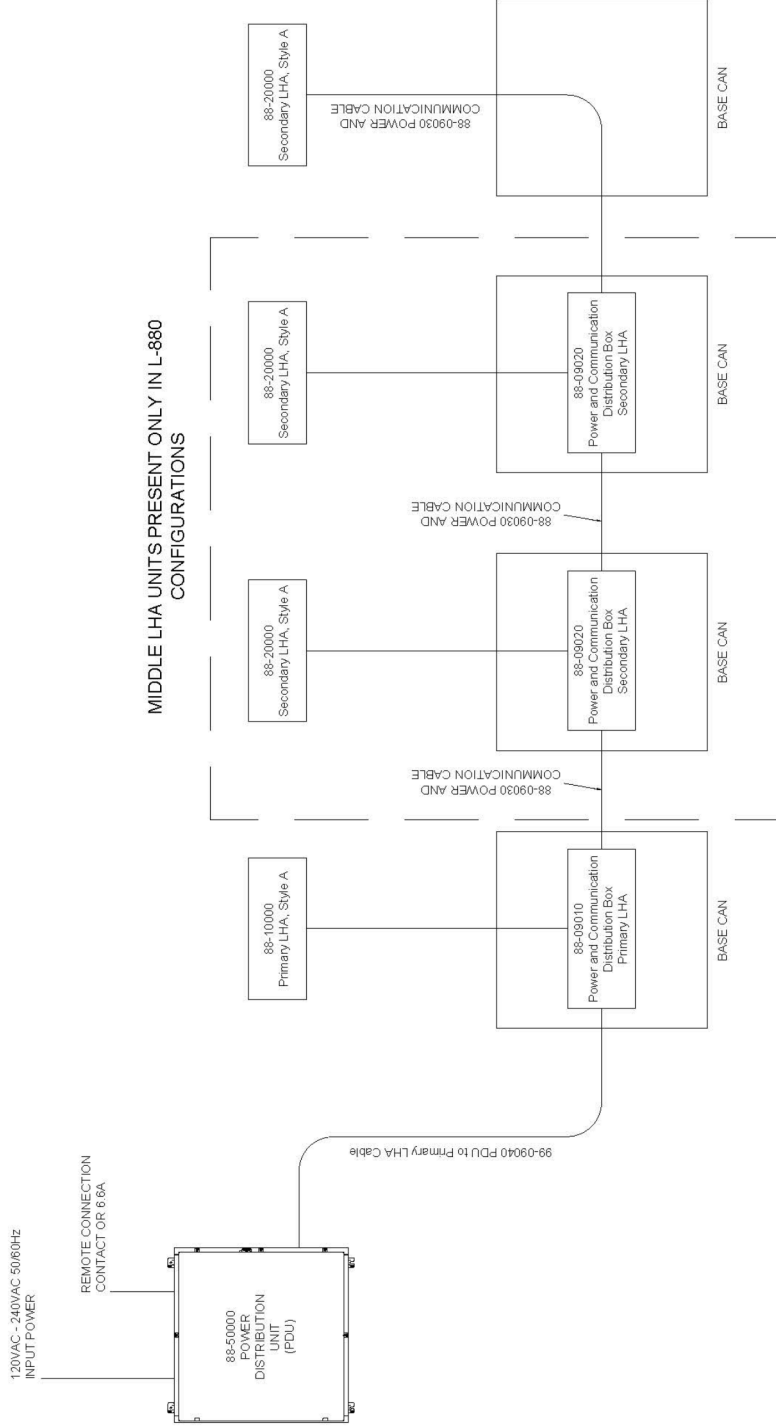
88-00036

	88-00100	Color	88-00400
Run 1	J1-1	Red	J1-1
Run 2	J1-2	Green	J1-2
Run 3	J1-3	Yellow	J1-3
Run 4	J1-4	Black	J1-4
Run 5	J1-5	Green/White	J1-5
Run 6	J1-6	Blue	J1-6
Run 7	J1-7	White	J1-7
Run 8	J1-8	White	J1-8
Run 9	J1-9	Violet	J1-9
Run 10	J1-10	Gray	J1-10



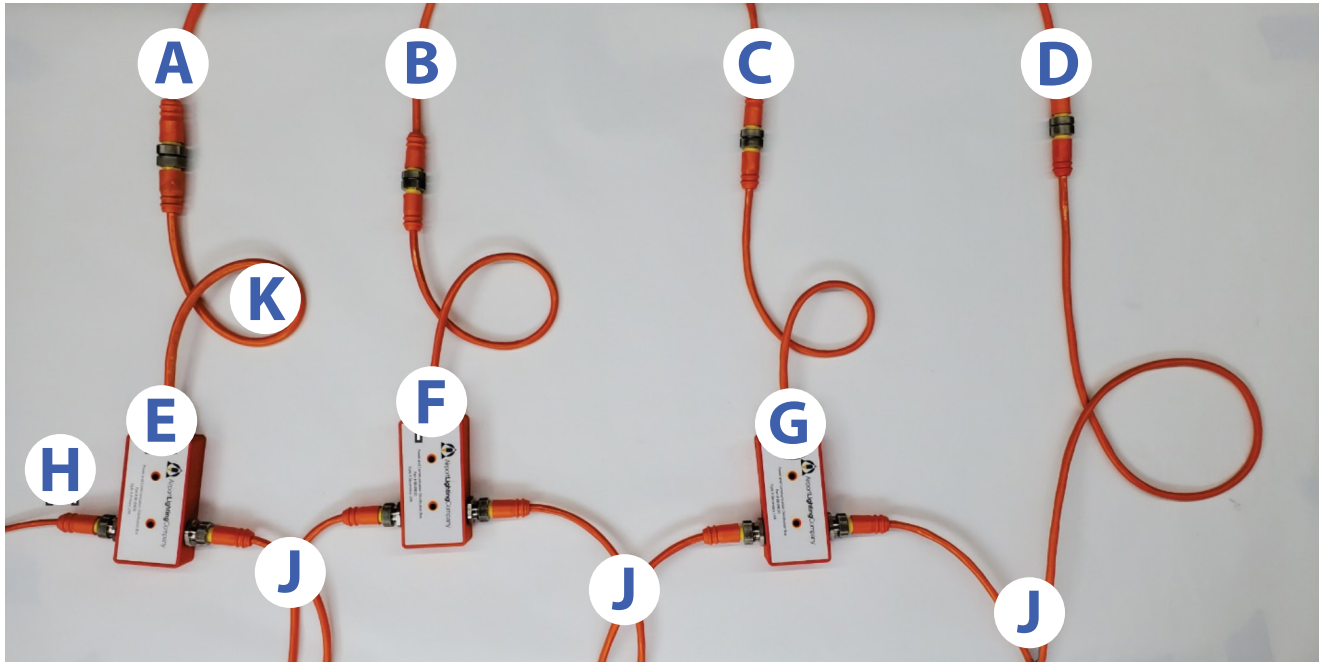
WIRING DIAGRAM

Block Wiring Diagram



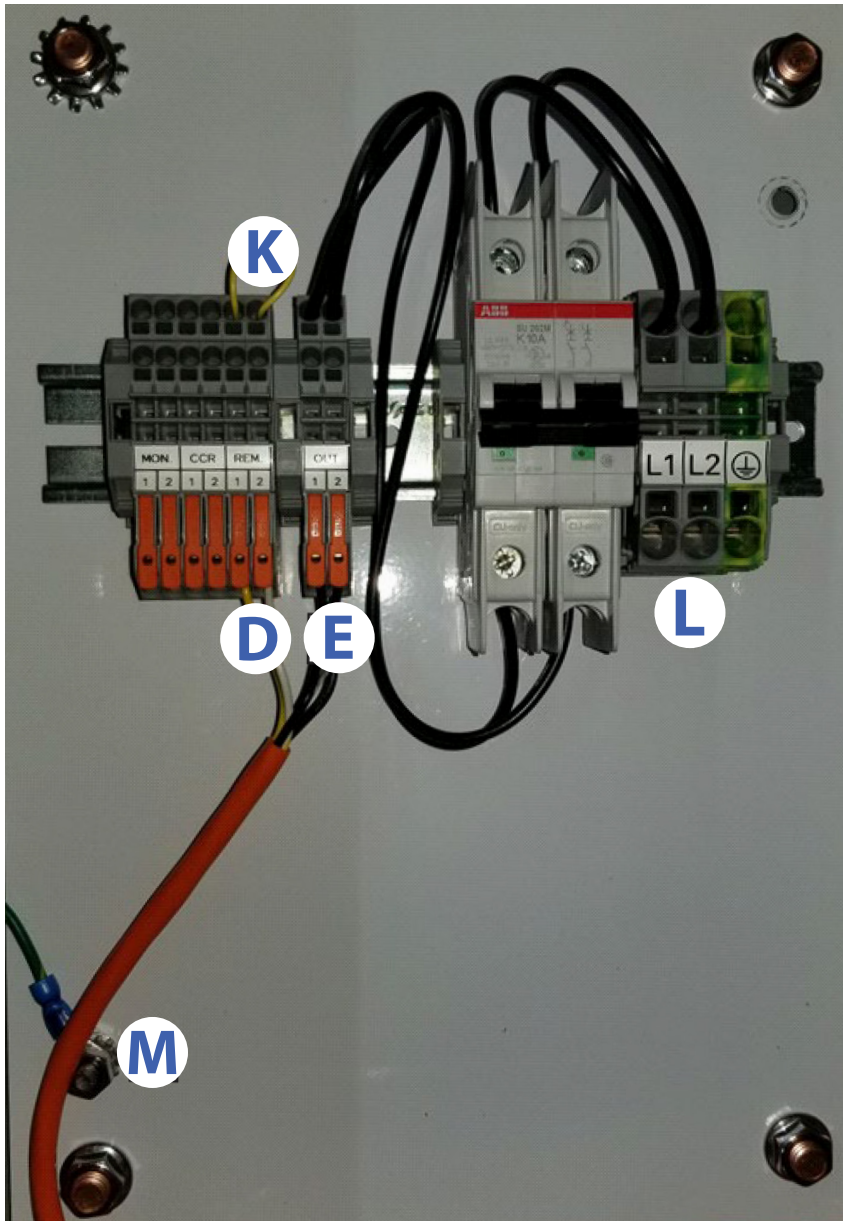
<p>Airport Lighting Company 108 FAIRGROUNDS DRIVE MANLIUS, NY 13104 PH: 315-682-6460 FAX: 315-682-6469 WWW.AIRPORTLIGHTINGCOMPANY.COM</p>	<p>DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED</p> <table border="1"> <tr> <td>MATERIAL:</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>FINISH:</td> <td>-</td> <td>-</td> <td>-</td> </tr> </table>	MATERIAL:	-	-	-	FINISH:	-	-	-	<p>TOLERANCES UNLESS SPECIFIED</p> <table border="1"> <tr> <td>XX</td> <td>±</td> <td>-</td> </tr> <tr> <td>XXX</td> <td>±</td> <td>-</td> </tr> </table>	XX	±	-	XXX	±	-	<p>88-1AXXXX L-880(L) / L-881(L) BLOCK WIRING DIAGRAM</p>
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System Wiring, 4 Box (L-880)



- A** 88-00040 Primary LHA Whip (Above Grade in 1-1/4" Liquid Tight Conduit)
- B** 88-00041 LHA 2 Whip (Above Grade in 1-1/4" Liquid Tight Conduit)
- C** 88-00041 LHA 3 Whip (Above Grade in 1-1/4" Liquid Tight Conduit)
- D** 88-00041 LHA 4 Whip (Above Grade in 1-1/4" Liquid Tight Conduit)
- E** 88-09010 Primary Power and Communications Distribution Box (Below Grade in L-867)
- F** 88-09020 Secondary Power and Communications Distribution Box (Below Grade in L-867)
- G** 88-09020 Secondary Power and Communications Distribution Box (Below Grade in L-867)
- H** 88-09040 PDU to Primary LHA Cable (Below Grade in Conduit)
- J** 88-09030 LHA to LHA Power and Communications Cable (Below Grade in Conduit and L-867)

PDU Wiring



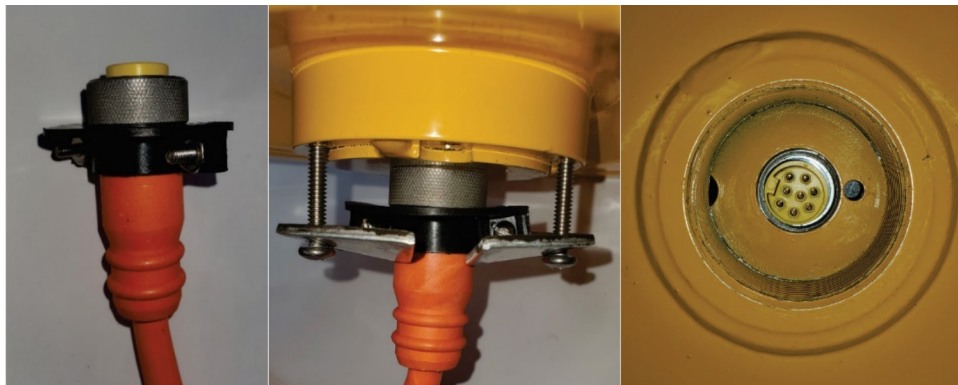
- D** Signal Wires to PAPI System
- E** Power Wires to PAPI System
- K** Jumper for Photosensor Control.
Replace with Remote wires if desired
- L** Input Power and Ground
(Contractor Supplied)
- M** Ground Stud

LHA Wiring

Each LHA will plug into a receptacle secured to a baseplate and mounted at grade. The receptacle is secured to the baseplate first by attaching an ALC #900 cable clamp (included in mounting kit) to the molded end.

Use the cable clamp and mounting hardware to secure this assembly to the baseplate.

Install the baseplate onto the base can to prepare for LHA connection

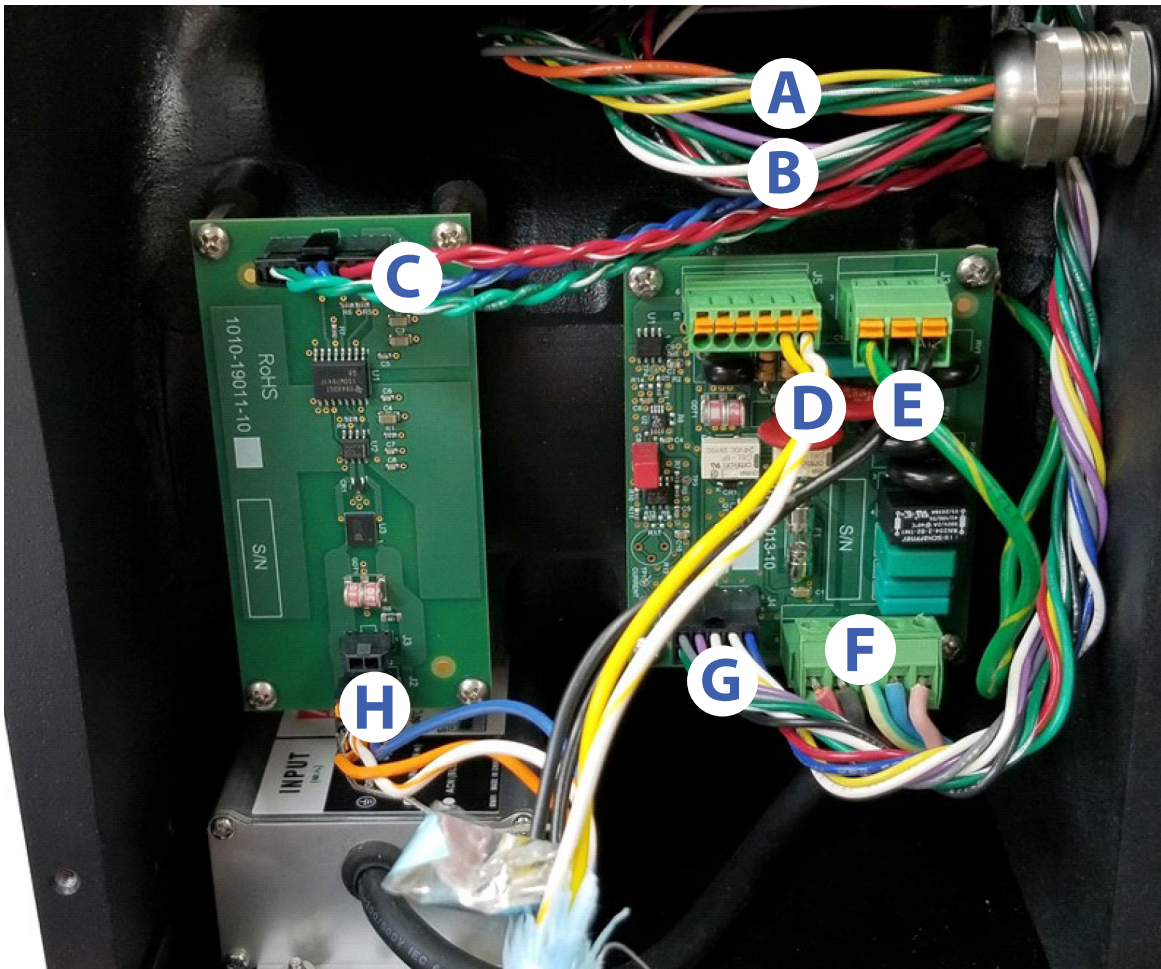


The LHA includes a 1-1/4" liquid tight elbow. The mounting kit includes the hardware necessary to complete the installation into the baseplate.



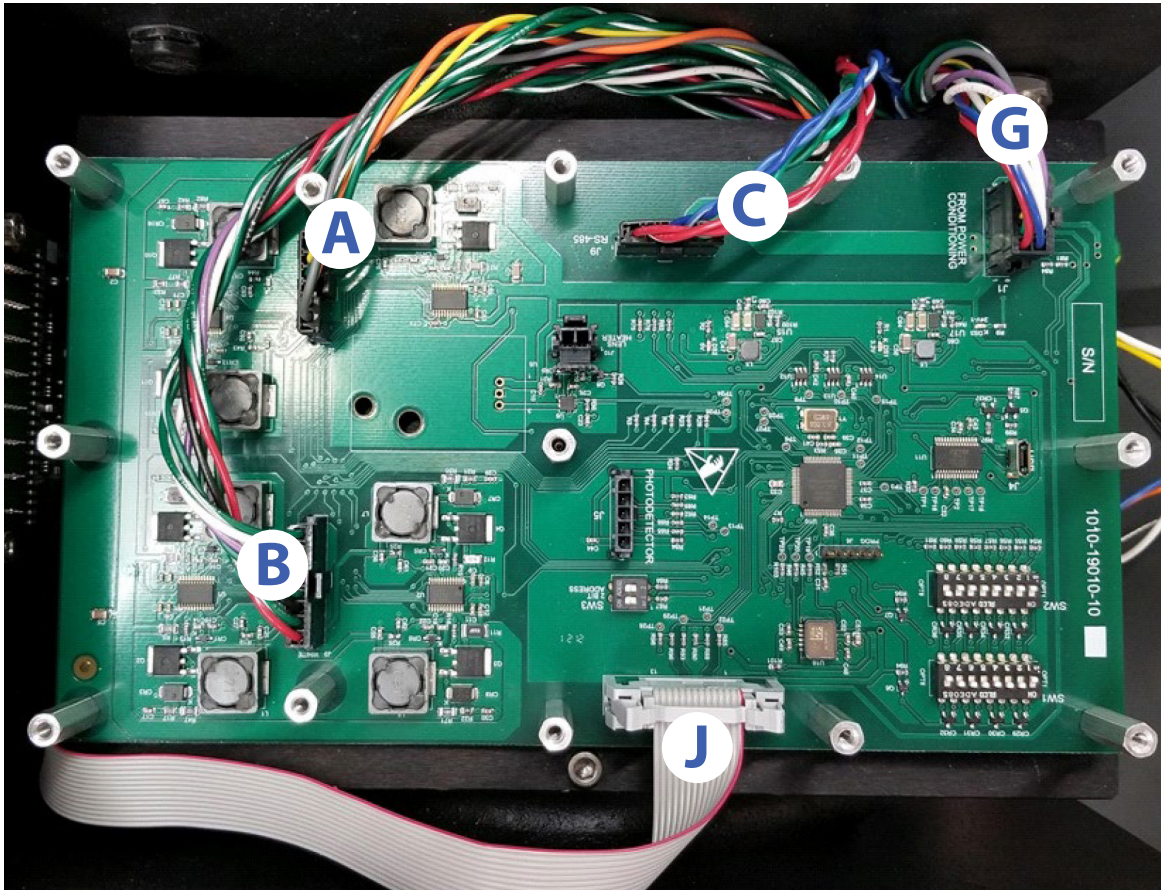
- | | | |
|----------|-----------------|---|
| A | 88-00032 | 1-1/4" Liquid Tight Straight Fitting |
| B | 59-N | Nut for 2" Frangible Coupling |
| C | 88-00033 | Liquid Tight Receiver |
| D | 59-B | 2" Frangible Coupling |

Left Side Wiring



A	LED Harness – RED	88-00034
B	LED Harness – White	88-00034
C	RS485 Communication Harness	88-00035
D	Signal wires from PDU	88-00400 J5 1-6 to TB1 REM 1,2 or CCR 1,2
E	Input Power and Ground	88-00400 J1 1,2 to TB1 OUT 1,2
F	Power Supply Connection	88-00400 J1-1->LINE J1-2->NEUTRAL J1-3->GROUND J1-4 ->V- J1-5->V+
G	Main Harness	88-00036
H	RS485 wires from underground bus	

Top Wiring



A	LED Harness – RED	88-00034
B	LED Harness – White	88-00034
C	RS485 Communication Harness	88-00035
G	Main Harness	88-00036
J	Display Ribbon	88-00038



Installation and wiring of the PDU

The ALC LED PAPI makes use of factory supplied cables and connections to eliminate any need for splicing. Connections from the Line Power and Remote Control or Current Sensing are made in the Power Distribution Unit.

- **After mounting the PDU to the rack, connect the two incoming power lines to TB-1 L1 and L2.**
- **Connect the Remote Control or Current Sensing wires to the input side of the terminal block.**
- **Connect the free leads of the 4-conductor PDU-LHA cable per the desired configuration (be sure to match this with the connections in the Primary LHA).**
- **For Local (Photosensor) Control, leave the jumper in place at REM, and connect the Yellow and White/Yellow wires to REM 1 and REM 2. In the Primary LHA, the Yellow and White/Yellow wires will be connected to Power Conditioning Board 88-00400 J5-1 and J5-2.**
- **For Remote Control, remove the jumper at REM and replace with wires from a dry contact relay. Continue as for Local Control.**
- **For Runway Interlock, connect wires from an L-830 to the top of CCR. Connect the Yellow and White/Yellow wires to CCR1 and CCR2. In the Primary LHA, the Yellow and White/Yellow wires will be connected to Power Conditioning Board 88-00400 J5-3 and J5-4.**
- **Monitoring connections to the system are made at the top of MON, and run from MON1 and MON2 to Power Conditioning Board 88-00400 J5-5 and J5-6.**

Installation of the LHA

The Airport Lighting Company LED PAPI is configured for quick and simple installation and aiming. Typically, the contractor need supply only 2" EMT for the legs and 1-1/4" liquid tight flexible conduit.

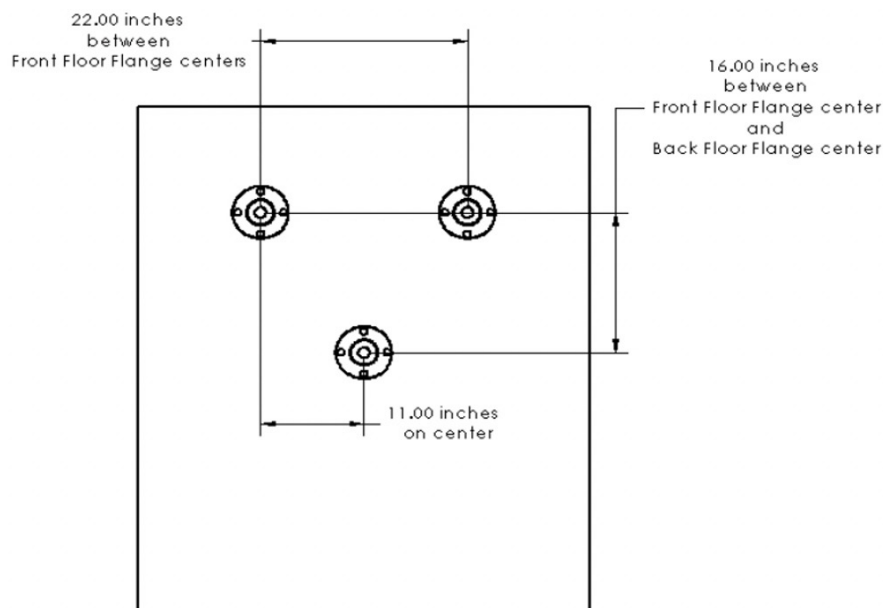
Except in situations with special siting considerations, the center of the lens must be within in +/- 1 inch of a horizontal plane that is within +/- 1 foot of the elevation of the runway centerline at the intercept point of the visual approach angle with the runway. Establish the height of this plane above mounting grade for each LHA. The EMT for the two front legs will be cut to 11-3/4" less than that. The EMT for the rear leg will be cut to 12-3/4" less.

EMT cut length example

Height of Lens Center	Front EMT Length	Rear EMT Length
32 inches	20-1/4" inches	19-1/4" inches

Assemble each leg and put in its place. Remove the top flange nuts. Lower the LHA on to the lower flange nuts. Replace the top flange nuts. Do not tighten the top flange nuts until after leveling and tilting the unit.

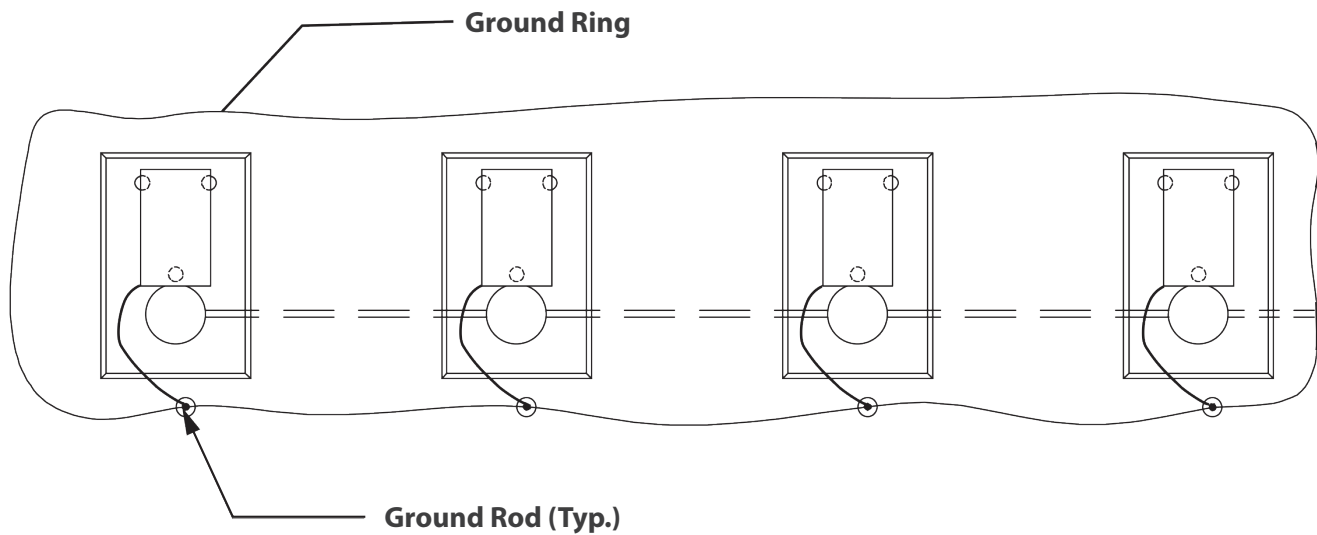
Run the LHA whip through contractor-supplied 1-1/4" liquid tight conduit from the elbow at the LHA to the straight connection at the frangible coupling, using the twist lock to the tighten the connection at grade with the whip from the distribution box in the L-867 base. In Style A installations, the final LHA in the sequence will have no distribution box in the L-867 base and will be connected to a cable run from the previous LHA's L-867 base can.



Proper Grounding

Each LHA is equipped with a grounding lug. Install a grounding wire connecting this lug to a ground rod. Install a bare ground wire around the perimeter of the entire LED PAPI system and attach it to each of the ground rods.

Except in situations with special siting considerations, the center of the lens must be within in +/- 1 inch of a horizontal plane that is within +/- 1 foot of the elevation of the runway centerline at the intercept point of the visual approach angle with the runway. Establish the height of this plane above mounting grade for each LHA. The EMT for the two front legs will be cut to 11-3/4" less than that. The EMT for the rear leg will be cut to 12-3/4" less.





Leveling and Tilting the LHA

- Remove the Top Cover of the LHA. Take care on the Primary unit to not stress the harness for the Photosensor.
- Set switches to Test Mode 1 (SW1-8 ON, SW2-8 OFF). This allows the system to operate while ignoring Tilt or Comm failures.
- Remove the top flange nuts on each mounting leg.
- Energize System using the Circuit Breaker in the PDU.
- Press the LEVEL button.
- Use the lower flange nuts on the two front legs to adjust the LHA until the display reads 0.00.
- Press the GLIDE button.
- Use the lower flange nut on the rear leg to adjust the angle of the LHA until the display reads the desired angle.
- Replace and tighten upper flange nuts, making any minor adjustments required to maintain display of desired angle.
- Press SET until display reads SAVE.
- Return switches to Normal (SW1-8 OFF, SW2-8 OFF)
- Replace top cover.



Adjustment of Baffles

The Airport Lighting Company LED PAPI comes with integral baffles for narrowing the beam signal in cases where there are obstructions that would interfere with a signal of typical width. Adjustment screw holes are located on each side of the LHA. Because the lensing system inverts the signal image, each screw reduces the beam as viewed from the opposite side.

- **Remove the top cover of the LHA**
- **Set to Test Mode 1 (SW1-8 ON, SW2-8 OFF)**
- **Loosen the top flange nuts on each mounting leg**
- **Raise the rear of the LHA until the display indicates a glide slope of approximately 0.00. This will allow the signal to be observed downfield at the desired beam cutoff point.**
- **Station an observer downfield along the desired cutoff angle**
- **Tighten the baffle adjustment screw until the observer can no longer see the signal**
- **Repeat for the opposite side as necessary**
- **Lower the rear of the LHA until the display indicates the desired glide slope angle**
- **Tighten the three top flange nuts**
- **Set the LHA to Normal Operating Mode (SW1-8 OFF, SW2-8 OFF)**
- **Replace the top cover**



Maintenance

The Airport Lighting Company LED PAPI is designed for years of trouble-free operation. The following are recommended regular maintenance actions.

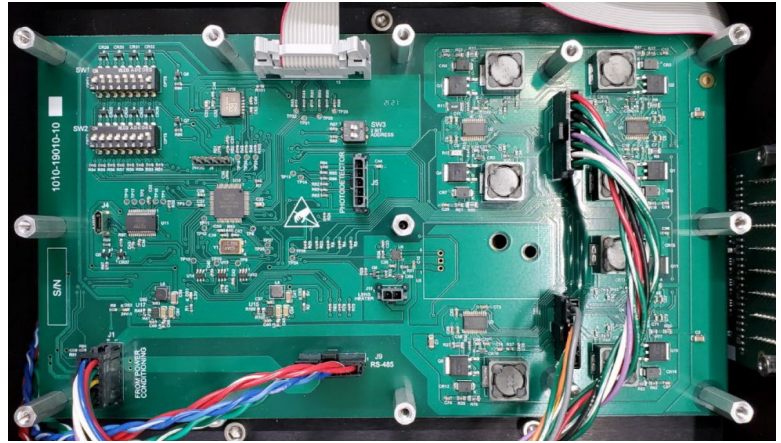
- **Compare and track actual tilt angle (displayed) to set tilt angle by pressing STATUS.**
- **Clean the lens**
- **Clean the photosensor cover**
- **Check all mounting hardware and tighten as required**
- **Check for any LED failures by holding a piece of paper in front of the lens where the LED pattern can be clearly seen. IF failures are observed, make sure a spare LED board is available. The unit will cease to operate before 25% of either color have failed and the board will need to be replaced.**

Troubleshooting Table

Displayed Error	Cause	Solution
COMM 485 LOST	Loose connection in LHA	Check connections in LHA and tighten
	Failed RS 485 Board	Replace RS 485 Board
PHOT FAIL	Loose harness connection	Check harness for loose connection
	Failed Photosensor Board	Replace photosensor board
TILT FAIL UNTx	Incorrect position of LHA x	Adjust LHA x until desired glide slope is displayed and Re-Set
	Failed Control and Tilt Board	Replace Control and Tilt Board
LED FAIL	Number of failed LEDs exceeds allowable maximum	Replace LED board and Calibrate
HEAT FAIL	Failed thermostat	Replace heated lens assembly
	Failed heater	Replace heated lens assembly

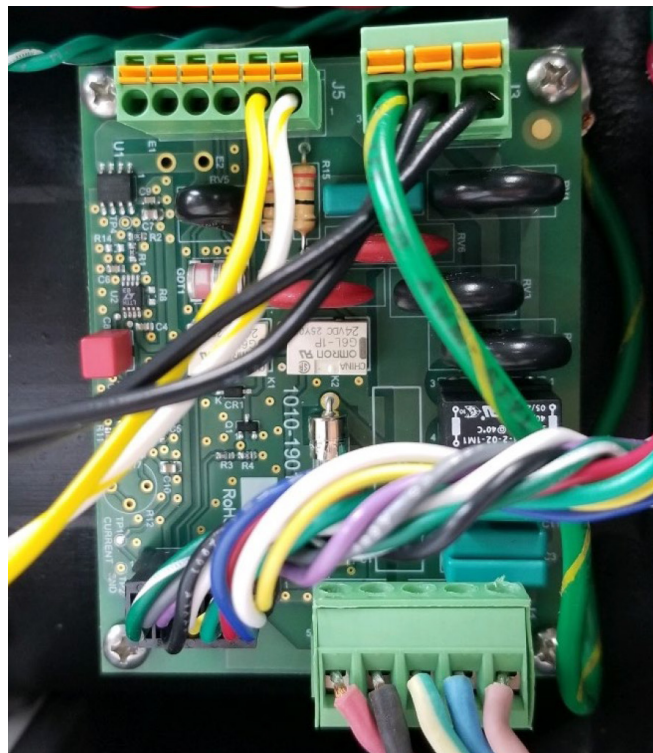
Replacing the Control and Tilt Board 88-00100

- De-energize the system using the circuit breaker in the PDU
- Remove the top cover of the LHA
- Disconnect all harnesses from the Control and Tilt Board
- Remove the long hex standoffs
- Lift the board gently off of the threaded studs, working gently around the edges on the board as needed
- Set all three banks (SW1, SW2, and SW3) of switches on the new board to match those of the board being replaced
- Set the new board on the threaded studs
- Gently press the board down onto the studs working in circular patterns from the center outward
- Return the hex standoffs to the threaded studs, snugging by hand in a circular pattern starting from the center of the board
- Re-attach all harness connections
- Energize the system using the circuit breaker in the PDU
- Place the unit into Test Mode 2 (SW1-8 OFF, SW2-8 ON)
- Confirm all LEDs are illuminated by holding a sheet of paper in front of the LHA at a distance where the pattern on LEDs can be easily recognized
- Press the SET button until the display reads CAL. The unit will cycle through each intensity (100%, 20%, 5%) and after the process has been completed, the display will resume indication of the glide slope.
- Return the unit to Normal Operating Mode (SW1-8 OFF, SW2-8 OFF)
- Replace the top cover



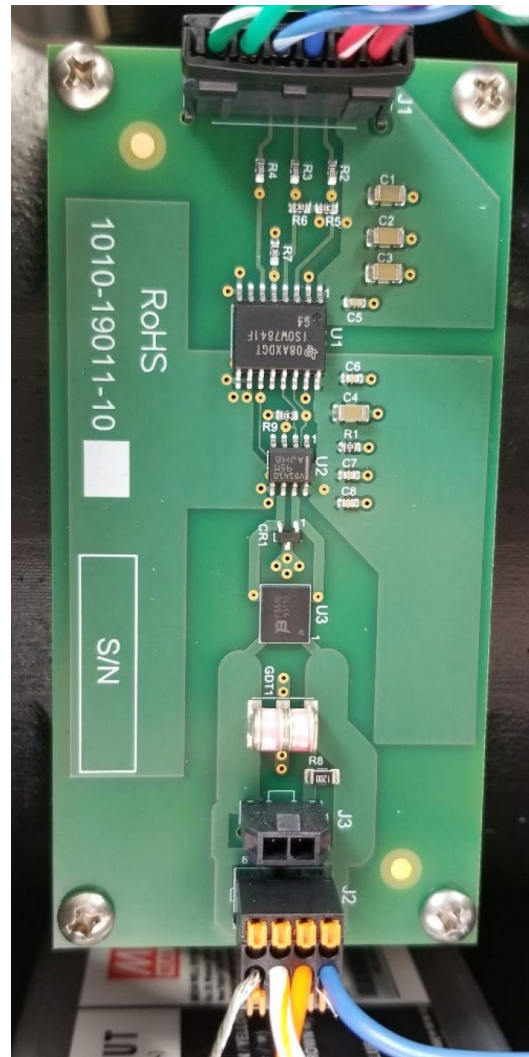
Replacing the Power Conditioning Board 88-00400

- De-energize the system
- Remove the Top Cover
- Remove the Left Cover
- Disconnect all harnesses from the Power Conditioning Board
- Note the position of the ground wire under the upper left screw
- Remove the 4 mounting screws
- Remove the Power Conditioning Board
- Install the new Power Conditioning Board with the 4 screws, making sure to replace the ground wire under the board with the upper left screw
- Plug in all harnesses
- Replace the Left Cover
- Replace the Top Cover
- Re-energize the system



Replacing the RS485 Communications Board 88-00300

- De-energize the system
- Remove the Top Cover
- Remove the Left Cover
- Detach the harnesses from the board
- If there is a resistor in J3, remove it and install it into the new RS485 Communications Board
- Remove the 4 screws
- Hold the new RS485 Communications Board in place
- Replace the 4 screws
- Reattach the harnesses
- Replace the Left Cover
- Replace the Top Cover
- Re-energize the system



Replacing the LED Light Engine

- De-energize the system
- Remove the 4 bolts in the Heat Sink
- Gently slide and rotate the heatsink away from the LHA taking care not to stress the harness
- Unplug the harness from the Light Engine
- Unscrews the Light Engine from the Heat Sink
- Replace the Light Engine
- Replace the screws
- Re-attach the harness and gently slide the Heat Sink back into place, taking care not to pinch the harness
- Replace the 4 bolts in the Heat Sink
- Re-energize the system
- Remove the Top Cover
- Place the LHA in Test Mode 2 (SW1-8 OFF, SW2-8 ON)
- Press the SET button until CAL is displayed
- The unit will cycle through 100%, 20% and 5% and then return to its initial state. If there is an issue with the calibration, the unit will blink several times.
- Place the LHA in Normal Operating Mode (SW1-8 OFF, SW2-8 OFF)
- Replace the Top Cover



Configuration of Switches

Primary LHA Only

	Style B	Local (PEC)	Style A	Runway Interlock	Remote Relay
SW1-1	OFF	OFF		ON	ON
SW1-2	OFF	ON		OFF	ON
		OFF		ON	
SW1-3	Number of LHAs	4		2	
SW1-4	Night Intensity	20%		5%	
SW1-5	Tilt Fail Response	ICAO/TP312		FAA	
SW2-1	Style B Illumination	All Steps		≥ B3	

All LHAs

		OFF	ON
SW1-3	# of LHAs	4	2
SW1-6	Test Mode LED Control	Off	On
SW1-7	Test Mode Intensity Control	Day	Night
SW1-8	Operating Mode	Normal	Test
SW2-4	Disable Heater	Off	On
SW2-8	Operating Mode	Normal	Test

Troubleshooting and Testing

	Normal Operation	Test Mode 1	Test Mode 2	Test Mode 3
SW1-3	OFF	On	Off	On
SW1-6	OFF	Off	On	On
		OFF	ON	
SW1-8	Tilt Fail Response	LEDs On	LEDs Off	
SW2-4	Heat Fail Override	Off	On	
SW2-8	LED Fail Override	Off	On	

Test Mode 1: Override all errors

Test Mode 2: Overrides Communications errors. Isolates unit from system.

Test Mode 3: Test Mode 2, with Current Loops Simulation using SW1-6



Explanation of Switch Configurations

Style B: For operation from 2.8A to 6.6A

Style A: For operation from 108-265VAC

Style A Local Control: The system remains illuminated and at the intensity determined by the Photosensor

Style A Runway Interlock: When current is sensed in the runway circuit, the system will illuminate. Intensity will be determined by the Photosensor

Style A Remote Control: The system illuminates upon closure of an external contactor at the intensity determined by the Photosensor

Tilt Fail Response: If the angle of the LHA deviates from its set point by (+.5-1.0°/- .25-.50°), enabling Tilt Fail Response will cause the system to extinguish, per FAA AC 150/5345-28. Non-FAA installations may wish to override this feature.

