

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

OWNER'S MANUAL



L-861SE(L)
Medium Intensity Runway Threshold Light



Airport**Lighting**Company

An ISO 9001:2015 Certified Company

L-861SE(L)

Medium Intensity Runway Threshold Light

Owner's Manual

ETL Certified to:

FAA AC 150/5345-46 and EB 67

Compliant to:

ICAO: Annex 14, Volume 1 (Current Edition)

T/C: Transport Canada TP 312



Manufactured by:

Airport Lighting Company

108 Fairgrounds Drive
Manlius, New York 13104
(315) 682-6460

Email: info@airportlightingcompany.com

Website: www.airportlightingcompany.com



L-861SE(L) LED Light



Compliances

Certified to FAA AC 150/5345-46 (Current Edition) and Engineering Brief No. 67



Application

Runway Threshold/End, Non-Precision IFR Runways

Key Features

- Long Life LEDs for over 50,000 hours of service.
- Light clarity ensured for years with glass lens.
- Dimmable to FAA intensity curve from 2.8 amp to 6.6 amps.
- Fixtures without arctic kits use 30/45W isolation transformers, fixtures with arctic kits use 65W isolation transformers.
- Plug and Know circuit design. Dynamic controller senses the attached light engines, allowing for greater service flexibility.
- Daytime recognition provided on lens retainers.
- Leveling surface and sighting cross on cap eliminates the need for an aiming device.
- Fixture surface area designed to meet LED thermal requirements.

General Catalog Numbers

ESEL-□□-□□-□

Side A

R = Red*
G = Green
O = Obscure

Side B

R = Red*
G = Green
O = Obscure

Mounting Height

14 = 14"
20 = 20"
24 = 24"
30 = 30"

Options

5 = Arctic Kit

* Unidirectional Red Not Available

Example: ESEL-RG-24 is 24" high with Red on Side A and Green on Side B.



Specifications

Dimensions

Height, head assembly: 6.8 inches, (173mm)

Height, w/ slip fitter: 8.9 inches, (226mm)

Width: 5.5 inches, (140mm)

Length: 5.2 inches, (132mm)

Weight: 7.2 pounds, (3.3kg)

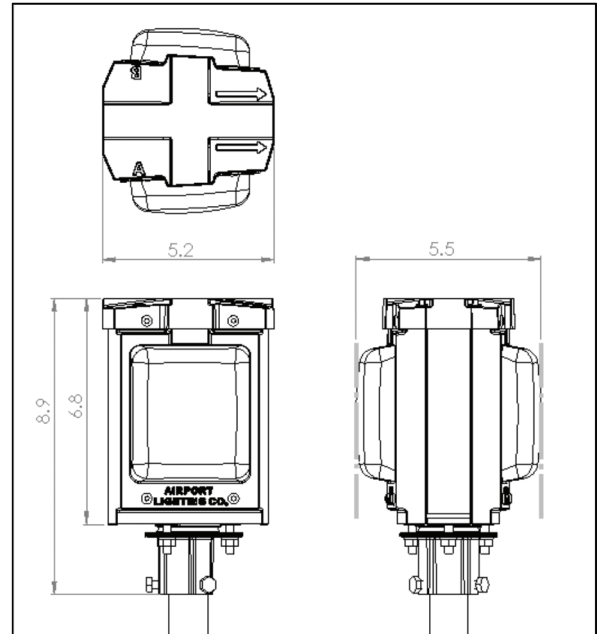
Single Box

(9 1/8 x 5 3/4 x 7 inches) or (232 x 178 x 146mm)

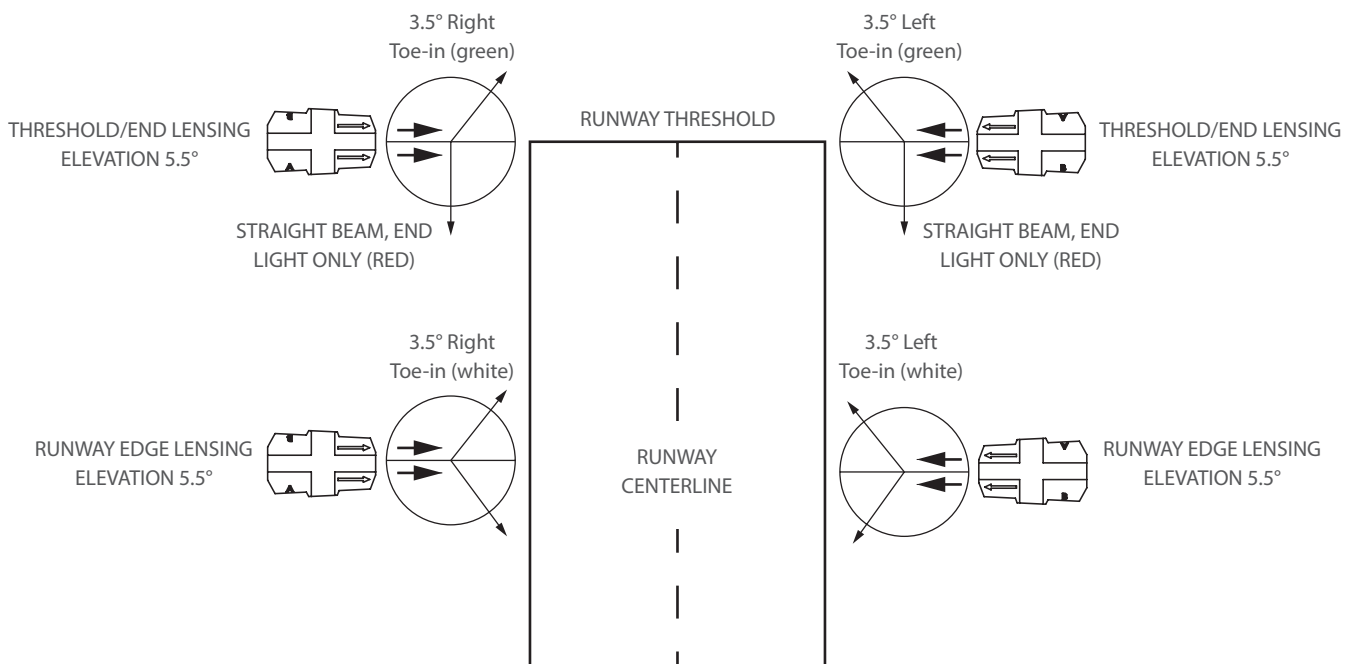
18 Fixtures in a Case

(18 x 17 x 16 inches) or (457.2 x 177.8 x 406.4mm)

View runway edge lights from runway centerline perpendicular to fixture when determining color in conjunction with right-hand and left-hand fixtures. The first color will be on the left toe-in side of the light fixture.



Fixture Dimensions





Parts

Head Assemblies

Includes housing, LED module, lens, and gasket

261SE-XXYY-Z

XX – G, R, O (Blank) YY – 14, 20, 24, 30 Z – 5 (Artic Kit)

Column & Power Cords

Height	Column	Power Cord
14"	77	262-1100
20"	78	262-1101
24"	78-16	262-1102
30"	79	262-1103

Light Engines

LED Module, Lens and Gasket

Color	w/o Artic Kit	Artic Kit
Red	262-1205	262-1205-5
Green	262-1206	262-1206-5

Circuit Boards

62-3010	Controller Board
62-3020	Input Board
62-3040	Connector Board
62-3025	Artic Kit Input Board
62-3050	AK Thermostat Board

Retainers

62-1032	Green
62-1032	Red
62-1033	Yellow (Blank side)

Accessories

34-L830-1X	L-830-1 30/45W Transformer
34-L830-3X	L-830-3 65W Transformer
62-1060	Frangible HEX Coupling
82-D4	L-823 Primary Connector Kit - #8 AWG
82-S-D4	L-823 Super Connector Kit
71	L-867B 12" baseplate 1.5" hub
80	Heat shrink tubing - adhesive throughout
81	Heat shrink tubing - adhesive ends only

X - M (Monroe/Integro), A (ABB/Amerace)

Fixture Loads

Volt/Amp Loads w/o Heater

Color	VA Load	Transformer Size
Red & Green	32	30/45W
Green	30	30/45W

Volt/Amp Loads w/ Heater

Color	VA Load	Transformer Size
Red & Green	43	65W
Green	33	65W

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HOW TO GET HELP



Airport**Lighting**Company
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General Inquiry:



PHONE: (315) 682-6460



EMAIL: info@airportlightingcompany.com

Technical Support:



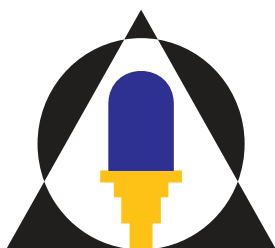
PHONE: (866) 212-1060



EMAIL: support@airportlightingcompany.com



WEBSITE: www.airportlightingcompany.com



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**108 Fairgrounds Drive
Manlius, New York 13104**



GUARANTEE



Airport**Lighting**Company

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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.

Statement of Warranty

<https://www.airportlightingcompany.com/terms-conditions/>



The ESEL Series from Airport Lighting Company is a series of elevated LED airfield lights that meet the L861SE Medium Intensity Elevated Runway Threshold Light (MITHL) specifications. The light is used on non-precision IFR runways. Every light in this series can be delivered with or without an arctic kit.

Ordering

- ESEL-GO-XX-X L861SE(L) Medium Intensity, Green/Obscure
- ESEL-GR-XX-X L861SE(L) Medium Intensity, Green/Red
- ESEL-OG-XX-X L861SE(L) Medium Intensity, Obscure/Green
- ESEL-RG-XX-X L861SE(L) Medium Intensity, Red/Green

Catalog Numbers

General Catalog Numbers

ESEL-□□-□□-□

Side A

R=Red
G=Green
O=Obscure

Side B

R=Red
G=Green
O=Obscure

Options

5=Arctic Kit

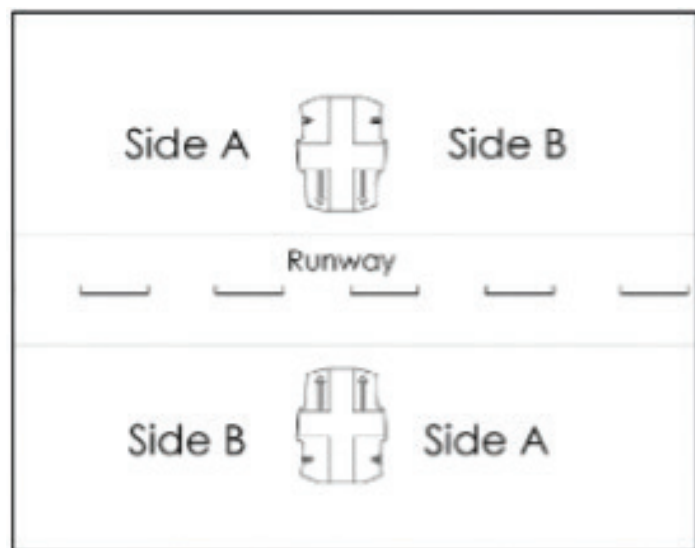
Module

14=14"
20=20"
24=24"
30=30"

Example: ESEL-RG is 24" high with Red on Side A and Green on Side B.

RO, OR, RR versions are not available.

Light Placement



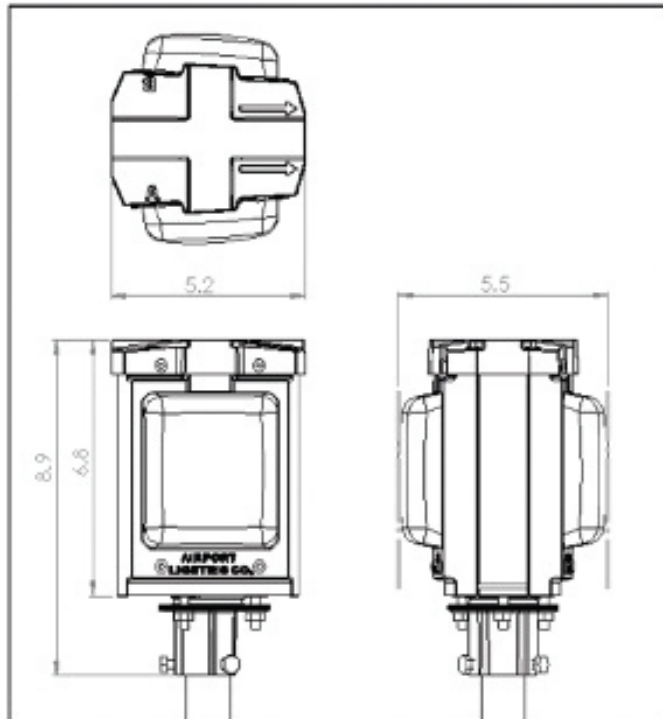


Dimensions

- **Height, head assembly:** 6.8 inches, (173mm)
- **Height, w/ slip fitter:** 8.9 inches, (226mm)
- **Width:** 5.5 inches, (140mm)
- **Length:** 5.2 inches, (132mm)
- **Weight:** 5 pounds, (2.3kg)
- **Single Box:**
(9 1/8 x 5 3/4 x 7 inches) or (232 x 178 x 146mm)
- **9 Fixtures in a Box:**
(17 x 16 1/2 x 10 inches) or (432 x 420 x 254mm)

Storage

The ESEL light should be stored indoors and kept dry until ready for installation.





FAA References and Siting Requirements

The requirements for siting of high intensity runway edge lights are explained in FAA advisory circular 150/5340-30J. The L861SE(L) fixtures are available in bidirectional red/green, and unidirectional red or green. Red and/or Green lens retainers will provide daytime recognition.

Tools Required for Installation

- 7/16 wrench
- 1 ½ inch wrench

Tools Required for Maintenance

- 7/16 wrench
- 1 ½ inch wrench
- Torx T20 driver

Installation Precautions

It is not safe to work on a constant current power system when the power is on. Make sure the power is off before installing a light fixture. A Lock Out Tag Out procedure is strongly recommended. An additional safety measure is to test circuits by using a clamp on current meter. By clamping over the primary cable in the fixture can, the installer has performed an additional safety check by checking if the circuit they are working on is off. At the vault make sure the Constant Current Regulator powering the circuit is off and has been tagged out. At the fixture, place a clamp-on ammeter over the primary cable and verify that the current measures are zero amps.

Install Proper Transformer

It is recommended to use the specified transformer to power the High Intensity LED Runway Light. A smaller transformer will not allow the fixture to work properly. An oversized transformer can be used but will not work as efficiently. A 30/45-Watt isolation transformer is specified for all non-Arctic Kit fixtures. A 65-Watt isolation transformer is specified for all fixtures with Arctic Kit.

Install Fixture

Loosely install the column to the fixture and pass the secondary cable thru the column and frangible coupling. Connect the secondary to the transformer. Fasten the column to the frangible coupling with a torque of 64 inch-pounds (5.3 foot-pounds).

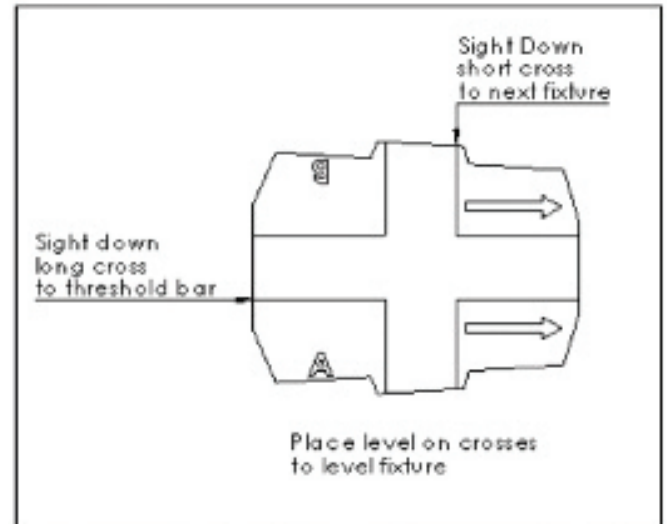


Install Frangible Coupling

Install frangible coupling into baseplate and torque to 50 ft-lbs. (68Nm). For a 62-1060 coupling into a 2in NPS baseplate, connect the 62-1060 to a 2in to 1 1/2in reducer, then install the reducer and coupling into the baseplate with a torque of 50 ft-lbs. (68Nm).

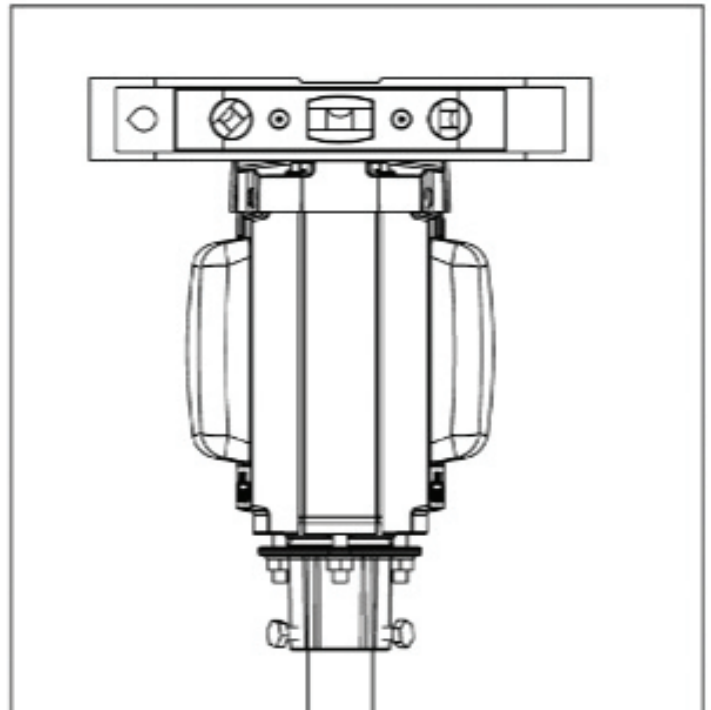
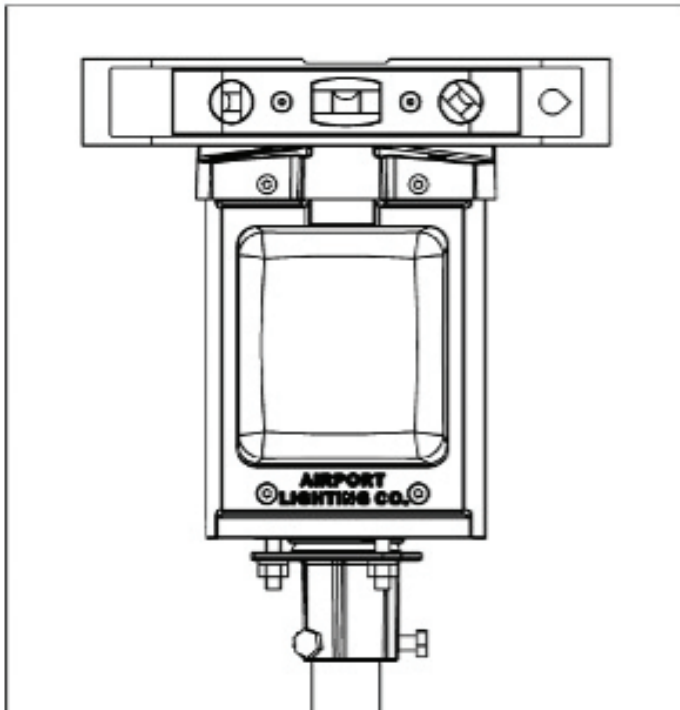
Aim Fixture

The arrows on the fixture cap should be pointed towards the runway centerline. The shorter cross on top of the cap is used to sight the fixture for alignment with the row of edge lights, the longer member of the cross can be used to align with the threshold lights. No special tools are required for installation of the system.



Level Fixture

Place a level on top of the cap and level the fixture. If a torpedo level is used, level in both directions of the cross. A bull's eye level can be used at the cross intersection.





Torque Bolts

Once the fixture has been aimed and leveled, torque the $\frac{1}{4}$ -20 fasteners to 64 inch-pounds (5.3 foot-pounds).
Recheck the level of the fixture.



The L862 LED product line is designed to work on a constant current electrical supply that delivers current from 2.8 amps to 6.6 amps. The fixture measures the input current and automatically adjusts the light intensity. The fixture contains an input board, a controller, and light engine(s). The fixture senses which color will be emitted by the light engine and adjusts its power accordingly. Change of light engine to a different color requires no user adjustments.

Inspect that the fixture is properly installed and connected to the correct isolation transformer. Turn on the fixture and the LEDs come on. Step the current level and the light intensity will adjust to the correct intensity. When stepping current, allow a few seconds for the intensity to readjust.

Plug and Know LED Circuit

The ALC L-862 light engines use a 6-pin connector. 2 of the 6 pins provide power to the LEDs. The remaining 4 pins are used to identify the light engine. When a light engine is connected to the fixture, the fixture knows which light engine has been connected. This allows the circuit to properly drive each light engine to its correct intensity.

Multiple Light Devices

The light engines are made up of multiple LEDs. FAA requires the fixture to shut off if 25% of the LEDs fail. The circuit is constantly looking at the LEDs. When 25% or more fail, the circuit will power down within 2 minutes and a minute later it will shut the fixture off. If the fixture is off, do not touch the fixture. There is still power going to the fixture. If a fixture appears to be off, cycle the power off and on. Observe the light engines. Replace the light engine that does not have all the LEDs working.

Arctic Kit

The optional arctic kit operates in series with the L-862(L) fixture. A thermostat determines whether the arctic kit is needed. If the temperature is low, the thermostat sends power to the heater(s) and the glass lens is heated. If the temperature is high, the thermostat shorts and only the fixture sees power.



Daily Maintenance

- Check that all lights are working.
- Check that all lights have similar light output.
- Check that the lenses are clean.

Monthly Maintenance

- Check that all fixtures are aimed properly.
- Check that all fixtures are level on 2 axes.
- Check that the fixture is secure, and all fasteners are tight.
- Check that all LEDs are illuminated.
- Clean the lenses.

Tech Support

Outside of aiming, leveling, and cleaning, the L-862 LED should require very little maintenance. The end user has the option to use this manual to perform advanced maintenance, to call tech support at Airport Lighting Company at (866) 212-1060 or to contact us by email at support@airportlightingcompany.com.

Tech support can provide the end user with an RMA, Return Merchandise Authorization number. Once the fixture has been evaluated by ALC, you will be either granted a warranty replacement, the option to repair the fixture or the option to purchase a new fixture.

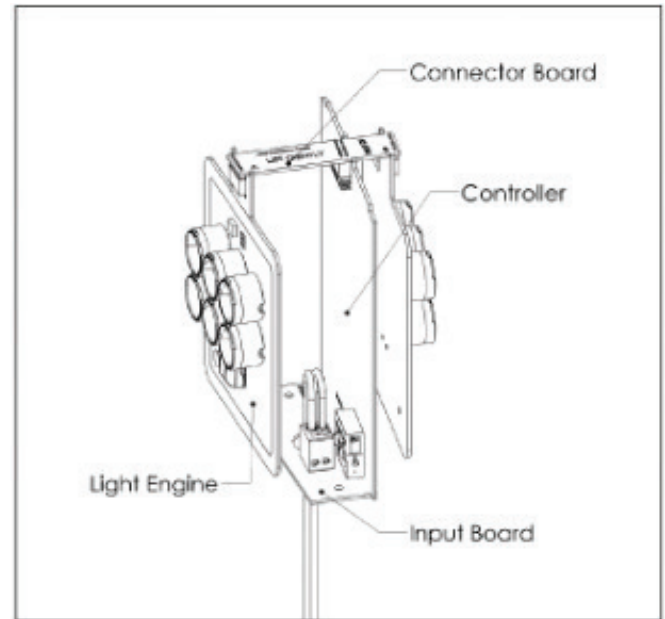
Troubleshooting

Problem	Cause	Solution
Light output too low	Glass is dirty	Clean lens
	Wrong current level	Check CCR current to fixture
	Isolation transformer too small	Install proper isolation transformer
	LED Engine is failing	Replace LED Engine
	Controller board is failure	Replace Controller Board
Only one side lit	LED Engine is disconnected	Check LED connections
	LED Engine has failed	Replace LED Engine
	Controller board has failed	Replace Controller Board
Both sides are out	Connection failed	Check all connections
	LED Engines have failed	Replace LED Engines
	Controller board has failed	Replace Controller Board
	Power input board failed	Replace input power board
	Arctic Kit has open circuit	Check arctic kit connections
Condensation inside lens	Excess humidity	It will clear itself

Replacing Electronic Parts

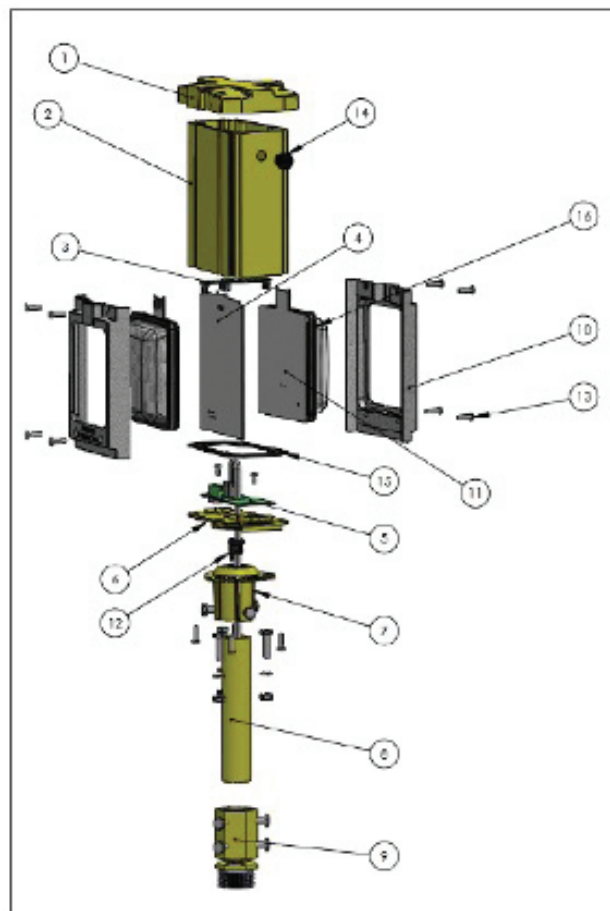
When the light is out the cause can be in a few areas. The way to isolate the problem is to start with a known good fixture. Test each part from the inoperable fixture in the known good fixture, one at a time, until the problem is isolated. Then replace the defective part.

- Note which side is side A and which side is side B.
- Remove the 4 screws that hold the cap in place.
- Remove the cap.
- Carefully pull the connector board upward to disconnect.
- Remove the 2 screws that hold the side A lens retainer in place.
- Remove side A LED light engine.
- Remove the 2 screws that hold the Side B lens retainer in place.
- Remove side B LED light engine.
- Pull the connector board upward and out of the fixture.
- Remove the 4 screws holding the bottom to the body.



Replacement Parts

Item	Part Number	Description
1	262-2400	L-862 Cap w/ gasket
2	262-1010	L-862 Machined body
3	62-3040	L-862 Connector board
4	62-3010	L-862 Controller board
5	62-3020	L-862 Input board
6	62-1040	L-862 Bottom casting
7	62-1050	L-862 Slip fitter
8	See below for columns and power cords	
9	62-1060	L-862 Hex coupling
10	62-1031	L-862 Lens retainer, red
	62-1032	L-862 Lens retainer, green
	62-1033	Blank side retainer, yellow
11	262-1205	LED engine/lens/gasket, red
	262-1205-5	LED engine/lens/gasket, red, AK
	262-1206	LED engine/lens/gasket, green
	262-1206-5	LED engine/lens/gasket, green, AK
12	99-00109	Starin relief
13	99-00244	8-32 Torx pan screws
14	88-00007	Vent
15	62-2010	Base perimeter gasket
16	62-2030	Light engine gasket
	62-3025	Arctic Kit input board
	62-3050	Arctic Kit thermostat board



Columns & Power Cords

Height	Column	Power Cord
14"	77	262-1100
20"	78	262-1101
24"	78-16	262-1102
30"	79	262-1103

Head Assemblies

Includes housing, LED modules, lens and gasket

261SE-XXYY-Z XX = G, R, O (blank) YY = 14, 20, 24, 30 Z = 5 (Arctic Kit)