

DOCUMENT 9929
REVISION L
March 23, 2009

COOPER Crouse-Hinds

Instruction Manual



Style 3, Inset Runway Edge Light (IREL), L-850C
Style 3, Inset Land and Hold Short Light (LHS), L-850F

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Instruction Manual
Style 3, Inset Runway Edge Light L-850C
Style 3, Inset Land and Hold Short Light L-850F

1 Revisions

Revision Number	Issue/Reissue Letter Number	Description	Checked	Approved
A	A201-059	INITIAL ISSUE	KWF	JMM
B	A201-095	REVISED TO ADD L-850F INFORMATION	KWF	JMM
C	A201-170	REVISED TO ADD L-850E INFORMATION	KWF	JMM
D	A201-279	REVISED PARAGRAPH 8.2	KWF	JMM
E	A202-156	REVISED PARAGRAPH 8.2	KWF	JMM
F	A204-180	Revised to update L-850D to latest manufacturing	GFR	JMM
G	A205-073	Para. 6.2 Bottom Housing was attached with #10-32 X 3/8 screws; Table in Para 9.2 added Item 26, Item 24 was 10000-400	GFR	JMM
H	A207-308	Figure 8, revised to show 21152 & 21154 and second lamp	12/3/07	PG
J	A208-157	Paragraph 5.1, added green info; 9.1, added item 25 & item 5 P/N was 21137-4 & item 6 P/N was 21115, item 23 P/N was 10000-468, item 20 qty was 4 for P1 & 3 for P2 & item 8 qty was 2 for P1 & 0 for P2 and 850C-XX-P2 header was 850C-XX-P1; added separate L-850C cut away view; 6.1, FAA AC 150/5345-46C was -46B; title page, deleted patent pending	9/19/08	PG
K	A208-188	Paragraph 6.4, FAA AC 150/5345-46C was -46B; 9.4, item 5 P/N was 21137-3, item 6 P/N was 21115, item 32 P/N was 10000-469 & added item 34; deleted L-850F from L-850E view & added to L-850C view	9/20/08	PG
L	A209-044	Removed paragraphs 5.2, 5.3, 6.2, 6.3, 9.2, 9.3 and Figures 5A, 6A, 8. Revised paragraph 7, 8.3, 8.5. Revised Figures 11, 12,13,14. Fixtures 850D3 and 850E3 have been removed from the manual	3/23/09	PG

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2 Limited Product Warranty

THE FOLLOWING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT BY WAY OF LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

Crouse-Hinds Airport Lighting Products (“the Company”) warrants to each original Buyer of Products manufactured by the Company that such Products are, at the time of delivery to the Buyer, free of material and workmanship defects, provided that no warranty is made with respect to:

- (a) any Product which has been repaired or altered in such a way, in Company’s judgment, as to affect the Product adversely;
- (b) any Product which has, in Company’s judgment, been subject to negligence, accident or improper storage;
- (c) any Product which has not been operated and maintained in accordance with normal practice and in conformity with recommendations and published specification of Company; and,
- (d) any Products, component parts or accessories manufactured by others but supplied by Company (any claims should be submitted directly to the manufacturer thereof).

Crouse-Hinds Airport Lighting Products’ obligation under this warranty is limited to use of reasonable means to repair or, at its option, replace, during normal business hours, at any authorized service facility of Company, any Products which in its judgment proved not to be as warranted within the applicable warranty period. All costs of transportation of Products claimed not to be as warranted and of repaired or replacement Products to or from such service facility shall be borne by Purchaser. Company may require the return of any Product claimed not to be as warranted to one of its facilities as designed by Company, transportation prepaid by Purchaser, to establish a claim under this warranty. The cost of labor for installing a repaired or replacement product shall be borne by Purchaser. Replacement parts provided under the terms of this warranty are warranted for the remainder of the warranty period of the Products upon which they are installed to the same extent as if such parts were original components thereof. Warranty services provided under the Agreement do not assure uninterrupted operations of Products; Company does not assume any liability for damages caused by any delays involving warranty service. The warranty period for the Products is 24 months from date of shipment or 12 months from date of first use whichever occurs first.

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3 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:

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 re-lamp with power ON.

3.2 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.

3.3 SAFETY SYMBOLS



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.

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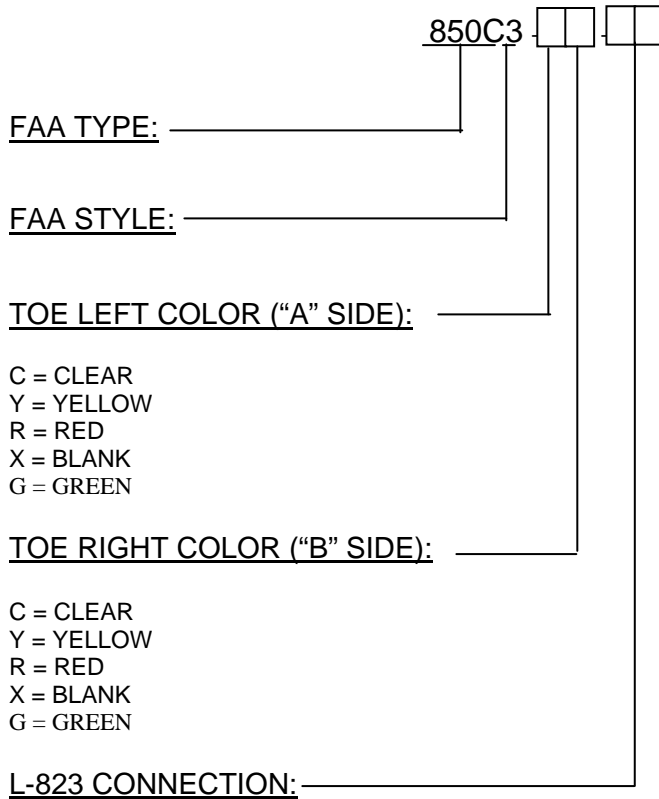
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5 Part Number Explanation

5.1 Runway Edge Light, L-850C



P1 = ONE PLUG (BLANK COLOR UNITS WILL HAVE A THREADED CAP INSTALLED ON SIDE "B" FEED-THRU ADAPTER)

P2 = TWO PLUGS (NOT AVAILABLE ON "BLANK COLOR UNITS")

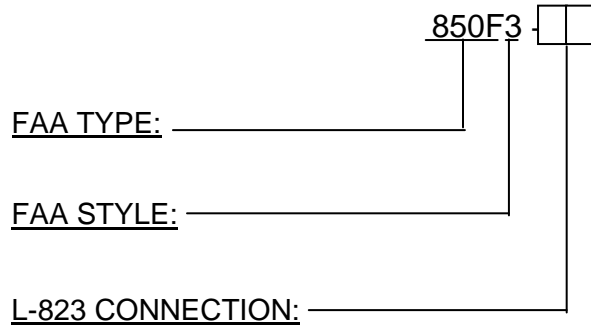
NOTE: THESE COLOR COMBINATIONS ARE PER FAA AC 150/5345-46C:
"CC", "CY", "YC", "CR", "RC", "YR", "RY", "YG", "GY"

NOTE: THESE COLOR COMBINATIONS ARE NOT AVAILABLE:

"XX", "YY", "RR", "GG"

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5.2 Land and Hold Short Light, L-850F



P1 = ONE PLUG (FILM DISC CUTOUT UNITS)

P2 = TWO PLUGS (UNITS WITHOUT FILM DISC CUTOUT ONLY)

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Style 3, Inset Runway Edge Light L-850C
Style 3, Inset Land and Hold Short Light L-850F**6 General Description****6.1 Runway Edge Light, L-850C**

The Crouse-Hinds Style 3 Runway Edge Light is an ITS verified FAA L-850C per FAA AC 150/5345-46B. It is designed for installation at runway edge locations where it is impractical to use an elevated light. It is used where taxiways intersect the runway or any other runway edge location subject to direct aircraft or vehicle impact. The fixture is designed to fit on a FAA L-868, steel, Size B light base per FAA AC 150/5345-42(latest version), and have a total height above grade/ground level of < .250 inch. The fixture is bi-directional, projecting two beams of light 180° apart, both with horizontal toe-in of 3.5°. The toe-in configurations are shown in Figures 1, 2 and 3. It is weatherproof and will endure roll over loads without damage. The light fixture consists of an aluminum optical assembly that is mounted to a light base with six bolts (3/8-16 UNC x7/8 lg., stn. stl.) and lock washers (3/8, stn. stl.). The aluminum housing has a die cast bottom housing that is attached using 6 screws (#10-32 X 3/8, stn.stl). There is a silicone gasket bonded to the bottom cover to seal the fixture. Four, 48 watt, MR-16 lamps are secured to four brackets, which are fastened to the bottom housing. Electrical connections are made at either one or two feed-thru assemblies in the inner cover. The feed-thrus have ITS verified L-823 plugs for connecting to FAA L-830/ L-831 Isolation Transformers. Lenses are held into the aluminum housing with a bracket, gasket, molded elastomeric boot and two screws. The light beam color is changed when it passes through a lens with the desired color dichroic coating on the inside surface. Lenses/beam colors can be changed in the field. The light beam color is marked with paint the same color as the lens, located on the top outside surface of the fixture. The direction of the light beam toe-in is indicated with an arrow applied to the top outside surface of the fixture. All hardware is type 18-8 stainless steel. The complete light unit is 11.94 inches in diameter, 3.56 inches deep, and weighs 13 lbs.

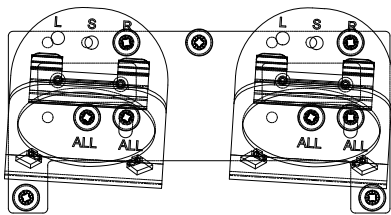


Figure 1: Right toe-in

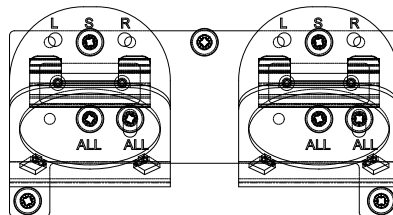


Figure 2 : Straight beam

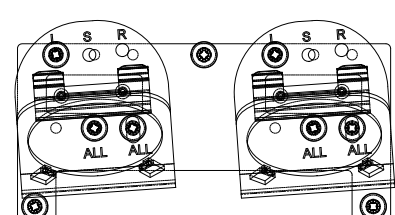


Figure 3: Left toe-in

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Style 3, Inset Land and Hold Short Light L-850F**6.2 Land and Hold Short Light, L-850F**

The Crouse-Hinds Style 3 Land and Hold Short Light is an ITS verified FAA L-850F per FAA AC 150/5345-46C. The fixture is designed to fit on a FAA L-868, steel, Size B light base per FAA AC 150/5345-42 (latest version), and have a total height above grade/ground level of < .250 inch. The fixture is uni-directional. The land and hold short light's main beam is straight, see Figure 2, above. It is weatherproof and will endure roll over loads without damage. The light fixture consists of an aluminum optical assembly that is mounted to a light base with six bolts (3/8-16 UNC x 7/8 lg., stn. stl.) and lock washers (3/8, stn. stl.). The aluminum housing has a die cast bottom housing that is attached using 6 screws (#10-32 X 3/8, stn. stl.). There is a silicone gasket bonded to the bottom cover to seal the fixture. Two, 48 watt, MR-16 lamps are secured to two brackets for land and hold short applications, the first lamp acts as a primary and the second lamp is a backup. The land and hold short light can operate either on a single circuit, in which the fixture would have a single lead and an internal lamp changeover mechanism. The dual circuit operation requires two separate circuits and the lamp changeover is done outside the fixture. The lamp holders are fastened to the bottom housing. Electrical connections are made at either one or two feed-thru assemblies in the inner cover. The feed-thrus have ITS verified L-823 plugs for connecting to FAA L-830/ L-831 Isolation Transformers. Lenses are held into the aluminum housing with a bracket, gasket, molded elastomeric boot and two screws. Lenses can be changed in the field. All hardware is type 18-8 stainless steel. The complete light unit is 11.94 inches in diameter, 3.56 inches deep, and weighs 13 lbs.

7 Installation

Caution: *Never handle the light assembly by the leads as this can break the waterproof seal*

The Style 3 IREL and LHS light units are shipped complete, including the lamps, and are ready for installation as received. Installation of a light unit is to be done with primary **POWER OFF** and **SECURED**. At each IREL light location, install a steel, Size B, 20 inch deep minimum, L-868 Light Base per FAA AC 150/5340-4 (latest revision). At each LHS light location, install a steel, Size B, 12 inch deep minimum, L-868 Light Base per FAA AC 150/5340-4 (latest revision). Install the light base with two opposite bolt-holes perpendicular to the runway centerline. Place the properly sized isolation transformer(s) in the light base and make necessary primary power connections using L-823 connectors. The IREL light units require either two 100 watt, 6.6A secondary transformers for the two lead version, or one 200 watt, 6.6A secondary transformer for the single lead version. The LHS units require either one 45 watt, 6.6A secondary transformer (for units with a single lead film disc cutout assembly), or two 65 watt, 6.6A secondary transformers (for units with two leads). Note that two lead fixtures require two separate circuits for operation on a LAHSO system. Verify that the mounting flange on the light base is clean and the o-ring (optional on deep cans) is coated with Dow Corning FS 1292 grease and is in place on the light base. Connect the plug(s) from the light unit to the secondary(ies) of the previously installed isolation transformer(s). Installation tool, Crouse-Hinds P/N 19999, will ease in the installation and removal of the light unit (See Figure 7). The threaded eyebolts on the lifting tool screw into threaded holes in the light

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fixture. Lower the light unit straight down onto the base. The light fixture is subject to optical misalignment or mechanical damage if not seated properly. Verify the light beam(s)/color(s) are properly orientated for the individual location. Secure the light fixture to the base with six 3/8-16 UNC x 7/8 lg. stn. Stl. bolts and lockwashers and tighten to 225 -0 +10 in-lbs. (18 ft-lbs.). Loctite 242 may be used on the bolts to prevent loosening due to vibration.

8 Maintenance

The preferred method of maintaining these lights is to periodically and systematically replace the fixture and return it to the maintenance shop for renovation. As an alternative, the fixtures can be serviced in the field. However, it is recommended that field servicing be limited to cleaning the lens as described in section 8.1 and to lamp replacements as described in section 8.2.

8.1 Cleaning Lenses

With a compressed air blast or suitable brushes, remove all accumulated debris from the light channels. Clean the outer surface of the prisms with a detergent solution. If the lenses are coated with a substance impervious to the detergent, a suitable solvent should be sparingly applied with a wad of cotton or a patch of cloth on the end of a wood splint. After the solvent has acted the remaining solvent and softened coating should be removed with a clean piece of cotton or cloth. Care should be taken to avoid excessive contact between the solvent and the lens seals. Remove all remaining solvent from lenses and seals. A gentle air blast may be used.

8.2 Relamping



Warning - Light assembly parts are hot when lamp is energized and remain hot for a short time after lamp/fixture is turned off.

Remove and secure power to the fixture. Separate the fixture from the mounting ring by removing the six bolts. Turn the light fixture upside down and remove the six screws holding the inner cover to the optical housing. Note the orientation of the lamp connectors and/or lamp jumpers underneath the lamp holder bracket tang. Disconnect the lamp leads from the feed-thru terminals. Remove the lamp connectors and/or lamp jumpers from underneath the lamp holder bracket tang. Long nose pliers are ideal for retrieving the connectors. One at a time, remove the Lamp Assembly by gently pulling up on the lamp reflector base. Remove and save the lamp terminals (P/N 21152) and/or the lamp jumpers (P/N 21154). It is recommended that all lamps in a fixture be replaced at the same time. Inspect the feed-thru and jumper terminals for signs of corrosion. Replace feed-thru assemblies per paragraph 8.5. Clean the inside surfaces of the lenses with denatured alcohol. Inspect the lamp holder brackets for loose hardware, tighten the mounting screws to 18 in-lbs., maximum.



Caution – Touching the quartz bulb with bare fingers may seriously shorten lamp life. If the bulb has been touched, wipe it clean with a piece of lens cleaning tissue or similar material moistened with denatured alcohol..

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Install the new lamps by reversing the procedure above. Connect the lamp leads to the lamp terminals and/or lamp jumpers. Refer to Figures 4 and 5 for wiring details. For wiring details on the L-850F see Figure 6. All lamp connectors must be placed underneath a lamp holder bracket tang. Most of the heat generated by the lamps radiates out from the reflector. Any connector touching or in close proximity to a lamp reflector will be damaged and could cause the fixture to fail. Make certain the rim of the reflector is flush against the bracket and seated against the two locating tabs at the bottom of the bracket. Connect the lamp leads to the feed-thru terminals. Inspect/ replace the inner cover gasket per paragraph 8.3. Assemble the inner cover onto the optical housing. The screw hole patterns in the inner cover and optical housing are offset to insure proper alignment. Tighten the mounting screws to 30 in-lbs. Perform a pressure test as described in paragraph 8.6. Reconnect the fixture plug(s) to the isolation transformer(s). Clean the mounting-surface of the light base and place the fixture on the mounting ring. Verify that the light beam(s) color orientation is correct. Torque the mounting bolts to 225 in-lbs.

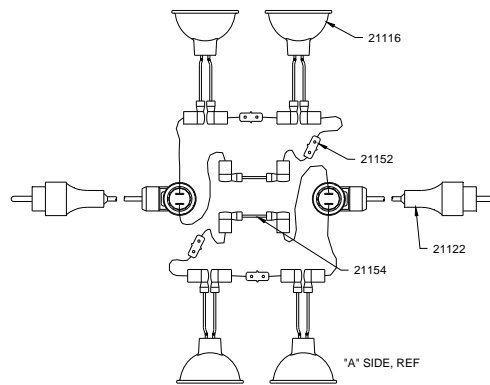
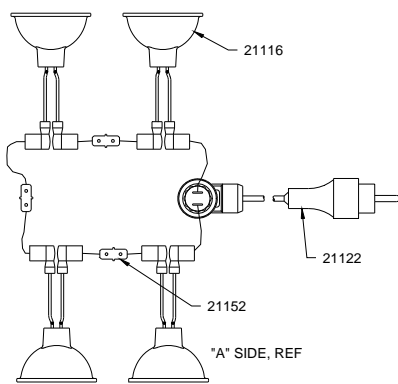


Figure 4 single-lead wiring diagram (L-850C) Figure 5 dual-lead wiring diagram (L-850C)

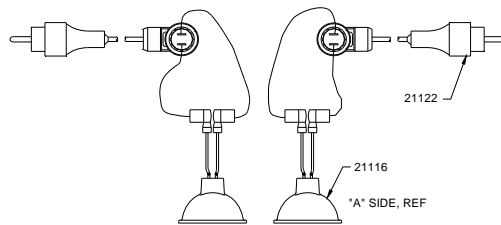


Figure 6 dual-lead wiring diagram (L-850F)

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8.3 Gasket Replacement

Every time the light fixture is opened the inner cover gasket must be closely examined and replaced if necessary. Any gasket that is stretched, torn, has a permanent set or some other defect, which would prevent it from forming a watertight seal must be replaced with a new gasket. Remove the old gasket from the groove in the inner cover. Carefully clean the flange mating surfaces and the inner cover groove, this can be done by carefully scraping. Take care not to damage the mating surface and the bottom and sides of the groove. Coat the new gasket (P/N 21140) with a thin layer of Dow Corning FS 1292 Lubricating grease. Position the new gasket in the center of the groove and press it into place. The groove is designed to be wider than the gasket, this provides room for displacement of the gasket when compressed between the housing and mating surface. The grease will hold the gasket in place while the inner cover is positioned on the optical housing. The screw hole patterns in the inner cover and optical housing are offset to insure proper alignment. Tighten the mounting screws to 30 in-lbs. Perform a pressure test as described in paragraph 8.6.



Note – A bad gasket seal is the most common cause of inset fixture leaks. It is strongly recommended that a new gasket be installed every time the Optical Assembly is opened.

8.4 Lens Replacement

If a lens is broken, leaks, or is badly pitted or scarred, it must be replaced. It is highly recommended that this task be performed in a clean shop environment. Lens Replacement Kits contain all necessary parts to change a lens. Refer to the Parts List section for the proper kit. **Remove and secure power to the fixture.** Separate the fixture from the mounting ring by removing the six bolts. Turn the light fixture upside down and remove the six screws holding the inner cover to the optical housing. Remove the two lens retaining bracket screws from the optical housing. Remove the lens-retaining bracket and discard the lens-retaining gasket. Firmly push the lens/boot assembly from the outside of the optical housing; discard the old lens and boot. Thoroughly clean the lens opening with denatured alcohol and allow it to dry. Inspect the lens opening for scratches or pits, a damaged lens-opening surface will not seal properly. Place a new lens boot (P/N 21103) over the replacement lens (P/N 21102-X). Apply a thin coat of Dow Corning FS 1292 grease over the entire outside surface of the lens boot. Align the lens/boot assembly in the lens opening and press it into place. Verify that the lens boot is not pinched in the lens opening. Using a new lens retaining gasket (P/N 21101), fasten the lens retaining bracket (P/N 21100) to the light housing. Torque the mounting screws to 30 in-lbs. Assemble the inner-cover onto the optical housing. The screw hole patterns in the inner cover and optical housing are offset to insure proper alignment. Torque the mounting screws to 30 in-lbs. Perform a pressure test per paragraph 8.6. Reconnect the fixture plug(s) to the isolation transformer(s). Clean the mounting-surface of the light base and place the fixture on the mounting ring. Verify that the light beam(s) color orientation is correct. Refer to Figures 1 through 4 above. Torque the mounting bolts to 225 in-lbs.

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Remove and secure power to the fixture. Separate the fixture from the mounting ring by removing the six bolts. Turn the light fixture upside down and remove the six screws holding the inner cover to the optical housing. Disconnect the lamp/jumper leads from the feed-thru terminals. Remove the feed-thru by unscrewing the retaining collar. Clean the mounting-surface with Isopropyl Alcohol and allow it to dry. Apply a thin coat of Dow Corning FS 1292 grease to the mounting flange of a new feed-thru (P/N 21121). Apply a drop of Loctite 242 to the feed-thru adapter threads. Screw the feed-thru retaining collar onto the adapter; refer to Figure 13 for proper inner cover/ feed-thru orientation. Torque the retaining collar to 30 in-lbs. Assemble the inner cover onto the optical housing. The screw hole patterns in the inner cover and optical housing are offset to insure proper alignment. Torque the mounting screws to 30 in-lbs. Perform a pressure test per paragraph 8.6. Reconnect the fixture plug(s) to the isolation transformer(s). Clean the mounting-surface of the light base and place the fixture on the mounting ring. Verify that the light beam(s) color orientation is correct. Torque the mounting bolts to 225 in-lbs.

8.6 Pressure Test

A light fixture should be subjected to a 20-psi air pressure test to verify that it is waterproof whenever it has been opened or components have been replaced. A tire valve style pressure fitting is located on the bottom of the inner cover. Pressurize the fixture to 20-psi then place it in a tub of water or use a soap solution to locate escaping air bubbles. Carefully inspect the areas around the lenses, inner cover seal, and feed-thru adapter for leaks. Relieve the internal air pressure before installing the fixture or attempting to repair a leak.



Note – Do not exceed 20-psi when pressure testing the fixture. Serious injury and/or permanent damage to the fixture may result if a higher air pressure is used. Once the pressure test is complete be sure to relieve the air pressure.

8.7 Cleanliness and Workmanship

Service life depends upon the entire assembly being waterproof. All surfaces must be clean, dry and free of all foreign matter if the light fixture is to operate for extended periods without requiring maintenance.

8.8 Maintenance Program

In order to insure maximum light fixture life, the installed units should be subject to a maintenance program in accordance with the following:

A daily operation check should be made of the lighting fixture. The lights should be energized and visually inspected. If any lamps are out, the location of the fixture should be recorded and the lamps replaced at a time when the circuit is de-energized. (See Section 8.2)

- 8.8.1 Regular cleaning is necessary in order to insure that inset lighting fixtures operate at maximum efficiency. The lenses and channels in front of the lenses should be cleaned periodically with a soft cloth and solvent. The weather and the location of the fixtures will dictate the regularity and type of cleaning.
- 8.8.2 Snowplow operators should exercise extra care not to strike the light fixtures with snowplow blades. After snowplow removal operations, inspect all light fixtures to locate and replace if necessary, any damaged Light Assemblies. Passes over the light rows should be made with a power broom only if practical. Whenever snowplows must traverse in-pavement light fixtures, they should be traveling at less

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- 8.8.3 than 5 mph or have the blades lifted clear of the fixtures. Recommended snow removal techniques are described in AC 150/5200-23.
- 8.8.4 The light is designed to exclude both ground and surface water from entering. If the lights are not properly maintained (i.e., bolts tightened and seals in good condition) water may enter the fixture. To prevent this from occurring, it is recommended that each fixture be inspected for the presence of water at least once a month. More frequent inspection is desirable during and following rainy seasons.
- 8.8.4 Light fixture hold-down bolts should be checked for proper torque (225 +5, -0 in-lbs.) at least once every three months or whenever a fixture is serviced regardless of the season. Light fixtures in and around the Touchdown Zone area are especially prone to vibration damage if the mounting bolts are not properly torqued. The mounting surface of the light base must be clean and free of foreign matter when checking mounting bolts.
- 8.8.5 If any fixture contains water, the water should be removed and the entire fixture cleaned and dried. Perform a pressure test per paragraph 8.6 to locate the source of the leak. Replace the bottom cover gasket (P/N 21140), see Section 8.3.

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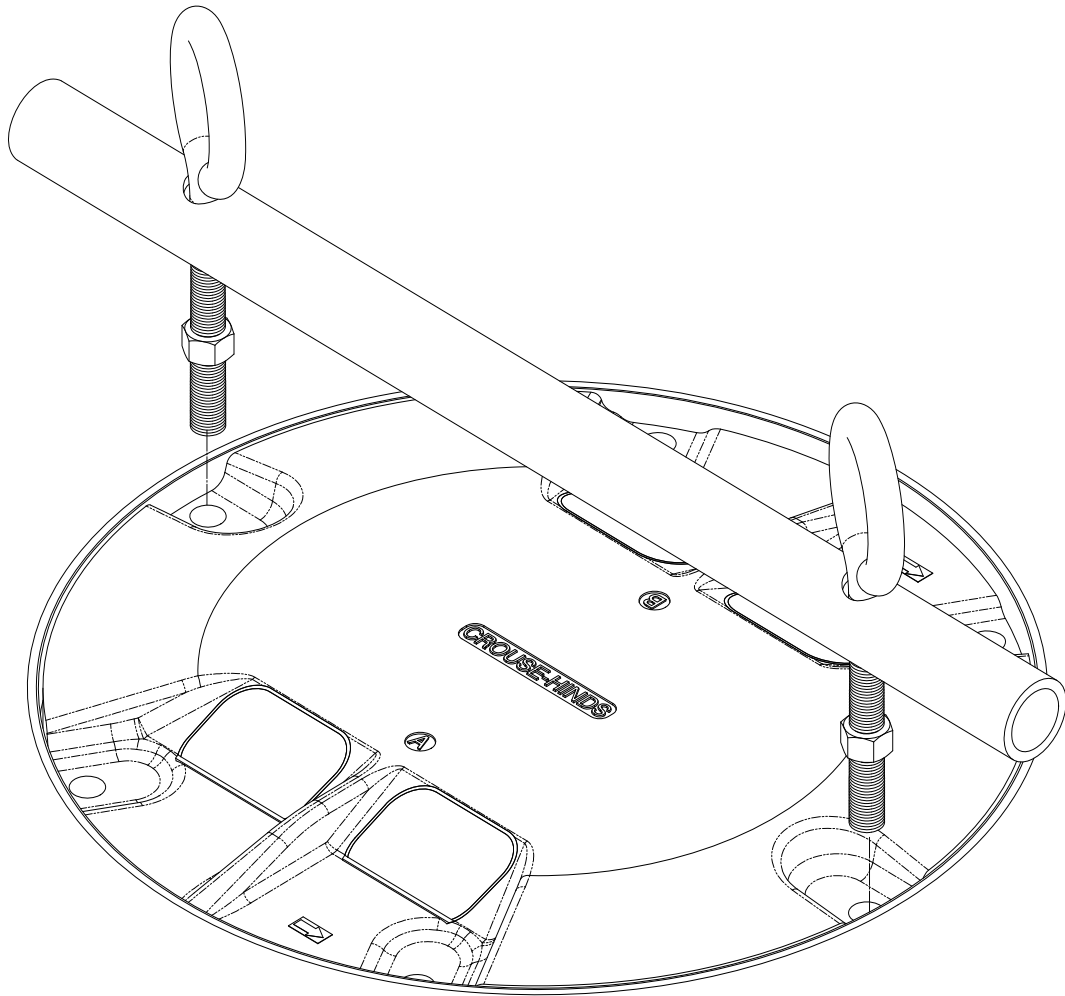


Figure 7 19999 Installation (Lifting) tool

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9 Parts List

9.1 Runway Edge Light, L-850C

ITEM	PART NUMBER	850C3-XX-P1 QTY	850C3-XX-P2 QTY	DESCRIPTION
1	21100	4	4	BRACKET, LENS RETAINING, 18-8 STN STL
2	21101*	4	4	GASKET, LENS RETAINING
3	SEE BELOW*	2 PER SIDE	2 PER SIDE	LENS
4	21103*	4	4	BOOT, LENS
5	21137-6	1	1	OPTICAL HOUSING, MACHINED, REL, ALUMINUM
6	21461	4	4	LAMP BRACKET ASSEMBLY, 18/8/ STN STL
7	21116	4	4	LAMP/REFLECTOR ASSEMBLY, 48W, 6.6A
8	21154	0	2	JUMPER, LAMP
9	21138-2	1	1	BOTTOM COVER, MACHINED, REL, 2 PLUG, ALUM.
10	21120	1	2	ADAPTER, THREADED, FEED-THRU, ALUMINUM
11	21122	1	2	FEED-THRU ASSEMBLY, 1 LAMP/1/PLUG, ALUM.
12	10037-795	1	1	FITTING, PRESSURE TEST, 1/8 NPT
13	10048-25*	A/R	A/R	SILICONE GREASE
14	10037-797	2	2	ARROW, SELF-ADHERING
15	10048-106	A/R	A/R	PIPE SEALANT
16	10035-61	2	2	O-RING, FEED-THRU
17	21109	1	0	FEED-THRU PLUG, ALUMINUM
18	21148	2	2	BRACKET, LAMP MOUNTING
19	21140	1	1	GASKET, BOTTOM COVER
20	21152	3	4	TERMINAL, DUAL MALE FAST-ON
21	10000-471	1	1	SCREW,SEMS, PAN HD TYPE 1A CROSS, GREEN, #10-32 X 3/8 LG, 18-8 STN STL
22	10000-468	8	8	SCREW,SEMS, PAN HD TYPE 1A CROSS/DRI-LOC, #10-32 X 1/2 LG, 18-8 STN STL
23	10000-517	18	18	SCREW,SEMS, PAN HD TYPE 1A CROSS/DRI-LOC, #8-32 X 5/16 LG, 18-8 STN STL
24	10000-400	6	6	SCREW,HEX WASHER HEAD/DRI-LOC, #10-32 X 3/8 LG, 18-8 STN STL
25	21454	6	6	STANDOFF, LAMP MOUNTING, L-850C

* These parts are included in a Lens Replacement Kit. Each kit contains parts to replace one lens.

LENS COLOR	ITEM 3 PART NUMBER	LENS REPLACEMENT KIT PART NUMBER
CLEAR	21102-C	21126-C
YELLOW	21102-Y	21126-Y
RED	21102-R	21126-R
BLUE	21102-B	21126-B

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9.2 Land and Hold Short Light, L-850F

ITEM	PART NUMBER	850F3-P1 QTY	850F3-P2 QTY	DESCRIPTION
1	21100*	2	2	BRACKET, LENS RETAINING, 18-8 STN STL
2	21101*	2	2	GASKET, LENS RETAINING
3	21102-C*	2 PER SIDE	2 PER SIDE	LENS
4	21103*	2	2	BOOT, LENS
5	21137-8	1	1	OPTICAL HOUSING, MACHINED, REL, ALUMINUM
6	21461	2	2	LAMP BRACKET ASSEMBLY, 18/8/ STN STL
7	21116	2	2	LAMP/REFLECTOR ASSEMBLY, 48W, 6.6A
8	21173	1	0	FILM DISC MOUNTING BRACKET
9	21138-2	1	1	BOTTOM COVER, MACHINED, REL, 2 PLUG, ALUM.
10	21120	1	2	ADAPTER, THREADED, FEED-THRU, ALUMINUM
11	21122	1	2	FEED-THRU ASSEMBLY, 1 LAMP/1/PLUG, ALUM.
12	10037-795	1	1	FITTING, PRESSURE TEST, 1/8 NPT
13	10048-25*	A/R	A/R	SILICONE GREASE
14	21172	2	0	FILM DISC CUTOOUT CONNECTION LEAD
15	10048-106	A/R	A/R	PIPE SEALANT
16	10035-61	2	2	O-RING, FEED-THRU
17	21109	1	0	FEED-THRU PLUG, ALUMINUM
18	21148	2	1	BRACKET, LAMP MOUNTING
19	21140	1	1	GASKET, BOTTOM COVER
20	10047-409	1	0	FILM DISC
21	20017	4	0	LEAD LUG
22	20023	1	0	SPRING CLIP
23	10047-525	4	0	0.032 X 0.25" #8 STUD MALE TAB
24	10030-57	8	0	1/4" ID X 1/2" OD STN STL FLAT WASHER
25	10030-100	8	0	0.253 ID. TEFLON INSULATED SHOULDER WASHER
26	10035-33-010	8	0	O-RING
27	10037-376	1	0	NICKEL-PLATED BRASS STRADDLE PLATE
28	10K04-025D	4	0	1/4-20 STN STL HEX HD JAM NUT
29	11A22-025D	4	0	1/4 STN STL INTERNAL TOOTH LOCKWASHER
30	10000-471	1	1	SCREW,SEMS, PAN HD TYPE 1A CROSS, GREEN, #10-32 X 3/8 LG, 18-8 STN STL
31	10000-468	8	8	SCREW,SEMS, PAN HD TYPE 1A CROSS/DRI-LOC, #10-32 X 1/2 LG, 18-8 STN STL
32	10000-517	18	18	SCREW,SEMS, PAN HD TYPE 1A CROSS, #8-32 X 5/16 LG, 18-8 STN STL
33	10000-400	6	6	SCREW,HEX WASHER HEAD/DRI-LOC, #10-32 X 3/8 LG, 18-8 STN STL
34	21454	3	3	STANDOFF, LAMP MOUNTING

* These parts are included in a Lens Replacement Kit. Each kit contains parts to replace one lens.

LENS COLOR	ITEM 3 PART NUMBER	LENS REPLACEMENT KIT PART NUMBER
CLEAR	21102-C	21126-C

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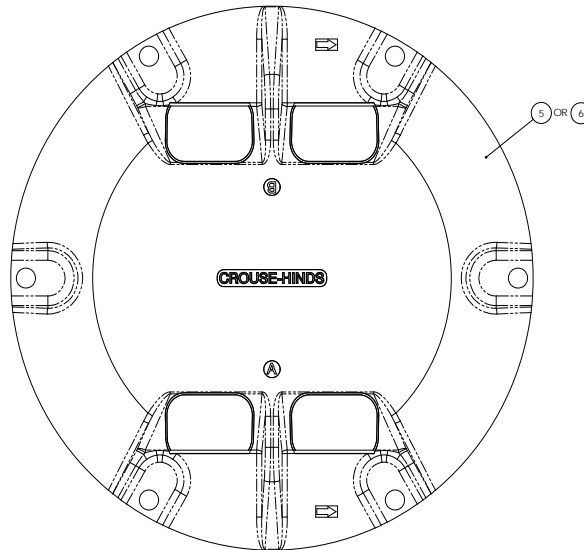


Figure 8 Top View of Fixture

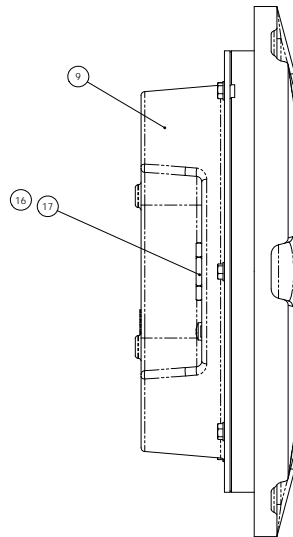


Figure 9 Side View of Fixture

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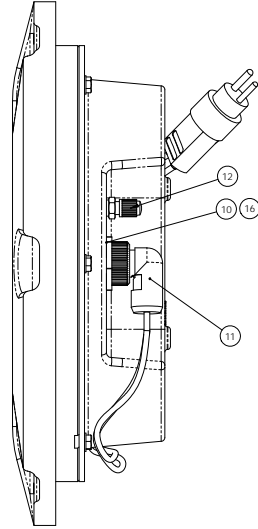


Figure 10 Feed-thru adapter detail

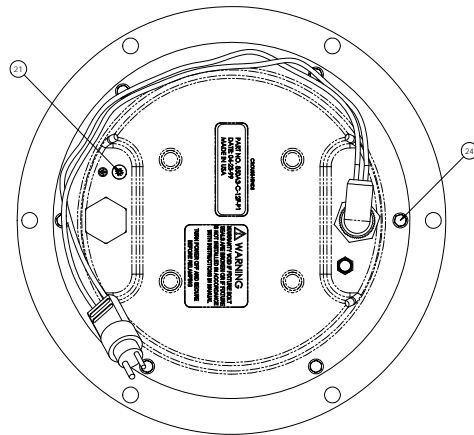


Figure 11 Bottom View of Fixture

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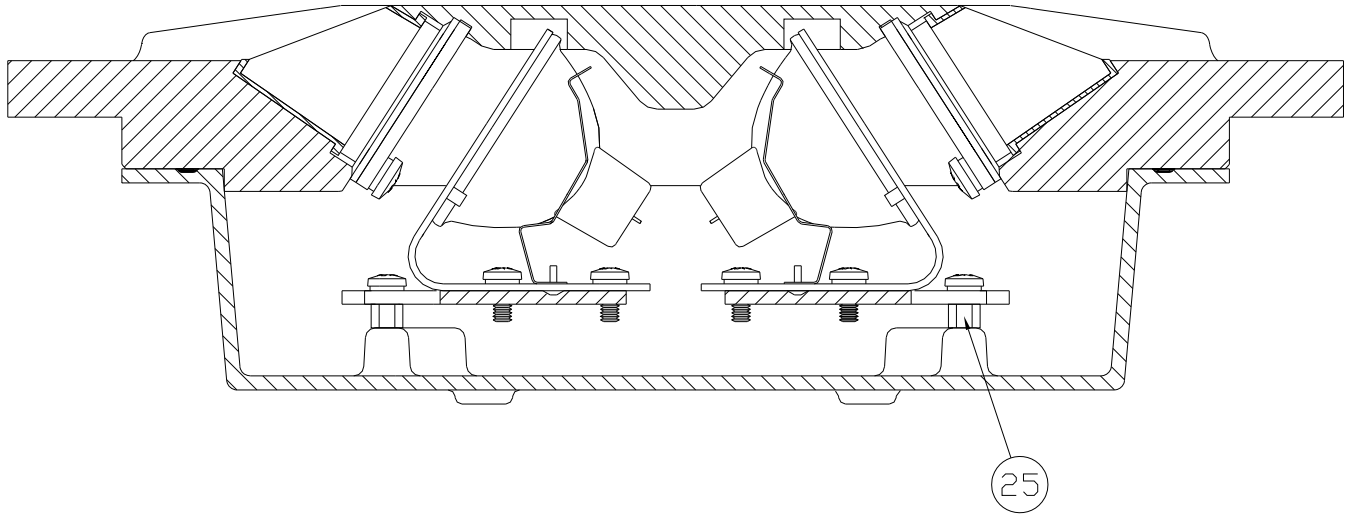


Figure 12 Cut Away View of Fixture

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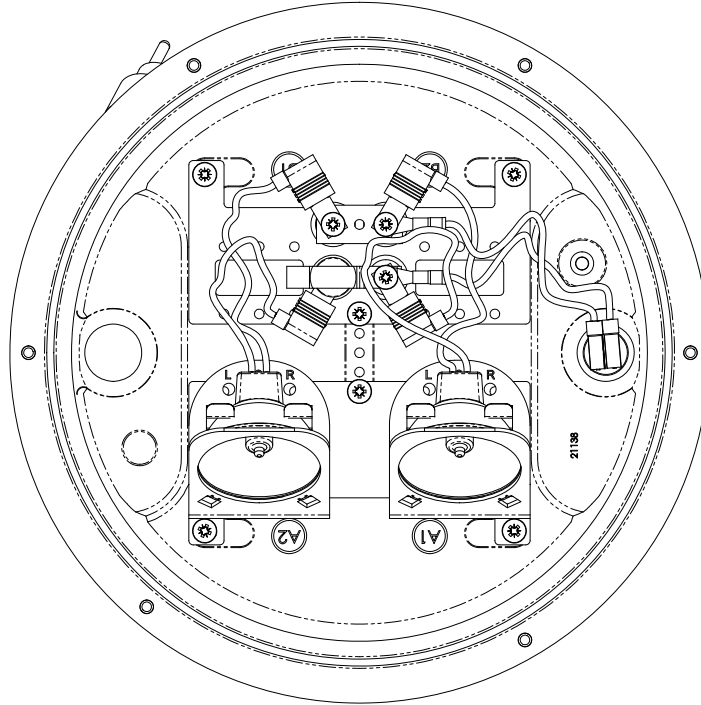


Figure 13: Film disc cutout assembly (L-850F)