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REVISION B
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COOPER Crouse-Hinds

Instruction Manual



*Model 5 – Single Lamp
Style III
Taxiway Centerline Light (TCL) L-852A & C
Pro-III In-pavement Single Lamp Fixture*

**Cooper Industries
Crouse-Hinds Division
Airport Lighting Products
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Instruction Manual
Model 5 – Style III
Taxiway Centerline Light L-852A & C**1 Revisions**

Revision	Issue/Reissue Letter Number	Description	Checked	Approved
A	A204-236	INITIAL RELEASE	KWF	JMM
B	A208-145	Pg1, added option “G”; added pg 13; pg 6, added 8.7 & renumbered all paragraphs after addition in section 8, pg V, renumbered pages after 6 accordingly	8/26/08	PG

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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 efforts 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 does 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.



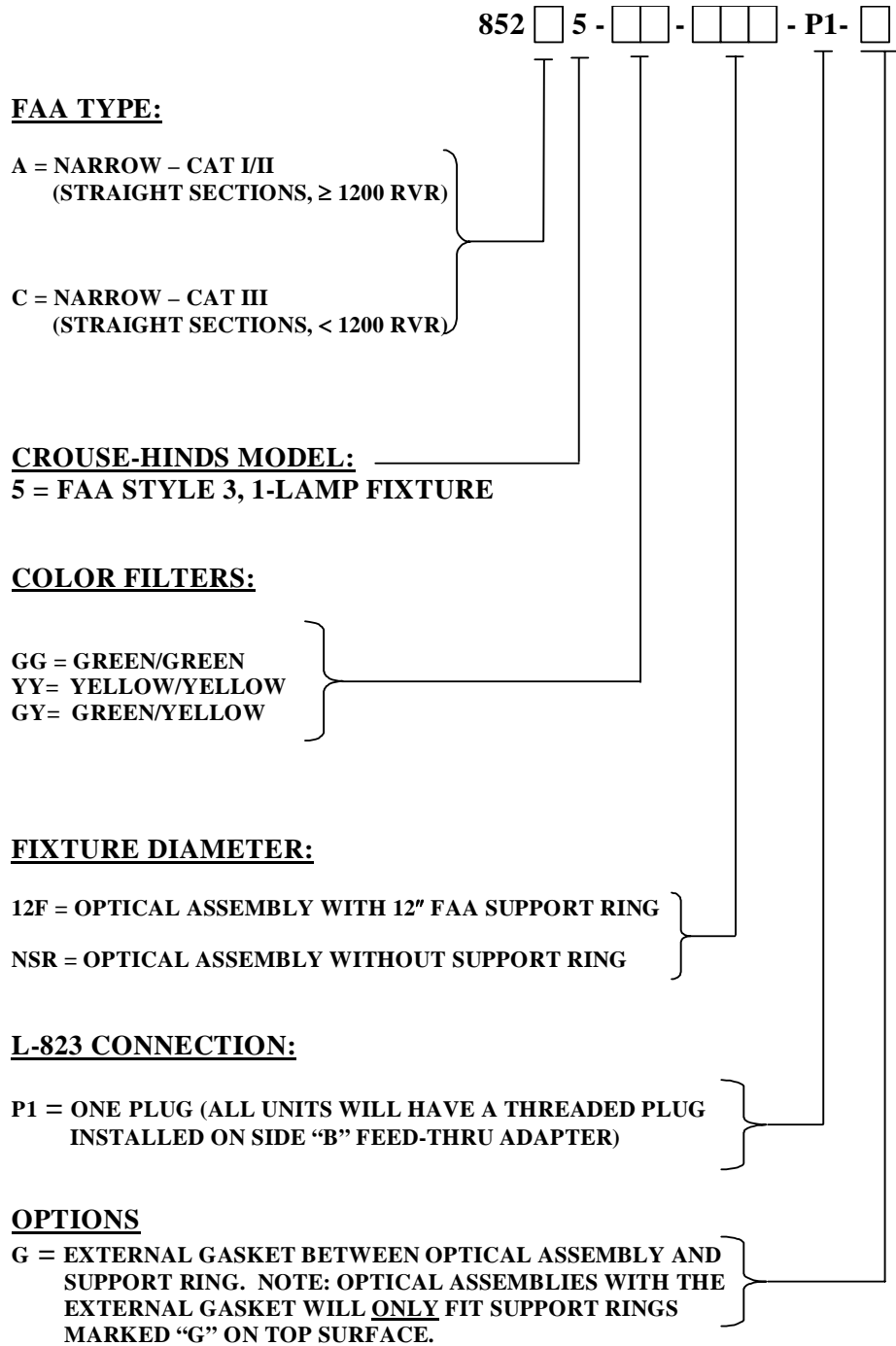
See FAA Advisory Circular AC 150/5340-26 for additional information.

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5 Part Number Explanation – Taxiway Centerline Light, L-852A & C



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Taxiway Centerline Light L-852A & C**6 General Description****6.1 Taxiway Centerline Light, L-852A**

The Crouse-Hinds Model 5 Taxiway Centerline Light is a Style 3, FAA L-852A per FAA AC 150/5345-46B. It is designed for installation at the centerline of taxiways or any other location where visual guidance of moving aircraft or ground vehicles is desirable. 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. It is weatherproof and will endure roll over loads without damage. The light fixture consists of a ductile iron support ring and a removable aluminum optical assembly. The ductile iron ring 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 is secured to the ductile iron ring using two high-strength bolts and two high-strength shear pins. The aluminum housing has a die cast bottom housing that is attached using 4 screws. A polyurathane o-ring is used to provide a watertight seal between the inner cover and the optical housing. A single lamp and 2 reflectors are secured to a centrally installed bracket, which is fastened to the bottom housing. Electrical connections are made at one feed-thru assembly in the inner cover. The feed-thrus has an ITS verified L-823 plug 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 can be changed in the field by switching the prisms. All hardware is type 18-8 stainless steel. The complete light unit is 11.94 inches in diameter, 3.63 inches deep, and weighs 21 lbs.

6.2 Taxiway Centerline Light, L-852C

The Crouse-Hinds Taxiway Centerline Light is an ITS verified FAA L-852C per FAA AC 150/5345-46B. Its design is identical to the L-852A described in section 6.1.



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

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7 Installation

The Style 3 TCL light units are shipped complete and are ready for installation as received. Installation of a light unit is to be done with primary POWER OFF and SECURED. At each light location, install a steel, Size B, 12 inch deep minimum, L-868 Light Base per FAA AC 150/5340-4 (latest revision). For TCL fixtures, install the light base with two opposite bolt holes perpendicular to the taxiway centerline. Place the properly sized isolation transformer in the light base and make necessary primary power connections using L-823 connectors. The TCL light unit requires a 45 watt, 6.6A secondary transformer. 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 from the light unit to the secondary of the previously installed isolation transformer. Installation tool, Crouse-Hinds P/N 19999, will ease in the installation and removal of the light unit (See Figure 1). The threaded eyebolts on the lifting tool screw into threaded holes in the light 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.). It is recommended that Loctite 242 be used on the mounting bolts to prevent loosening due to vibration. Loctite is required for fixtures subjected to repeated aircraft impacts and roll-overs.

8 Maintenance

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

8.1 Cleaning Lenses

With a compressed air blast or suitable brushes, remove all accumulated debris from the light channel. Clean the outer surface of the prism with a detergent solution. If the lens is 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 seal. Remove all remaining solvent from lens and seal. A gentle air blast may be used.

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Note – Power Supply is hot when fixture is energized and remains hot for a short time after fixture is turned off.

Remove and secure power to the fixture. Separate the Optical Assembly from the outer ring by removing the two bolts. There are two pry slots in the optical housing to help separate the Optical Assembly from the support ring. Turn the Optical Assembly upside down and remove the four screws holding the inner cover to the light housing. Disconnect the lamp leads from the feed-thru terminals. Inspect the feed-thru terminal for signs of corrosion. Replace feed-thru assemblies per paragraph 8.5. Clean the inside surfaces of the lens(es) with denatured alcohol. Install the new lamp by reversing the procedure above and making sure that the screws at tighten to 30 in-lbs. Make certain the lamp is placed with the rounded slot against the pin on the bracket and aligned to 45° by centering the attachment hole to the opposite square slot. Inspect/replace the optical housing's o-ring per paragraph 8.3. Assemble the inner cover onto the light housing. Tighten the mounting screws to 30 in-lbs. Clean the mounting flange area of the support ring. Place the Optical Assembly into the support ring. Apply Loctite 242 (P/N 10048-30), per manufacturer's instructions, to both mounting bolts and immediately torque them to 225 -0+10 in-lbs.

8.3 O-Ring Replacement

Every time the Optical Assembly is opened, the o-ring must be closely examined and replaced, if necessary. Any o-ring that is stretched, torn, has permanent set, or some other defect which would prevent it from forming a watertight seal must be replaced with a new o-ring.



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

Remove the old o-ring from the groove in the optical housing. Carefully clean the o-ring groove and flange mating surface on the inner cover. Take care not to damage the mating surface or the o-ring. Coat the o-ring (P/N 10035-62) with a thin layer of Dow Corning FS 1292 Lubricating grease. Position the new o-ring in the center of the groove and press it into place. Torque the inner cover screws to 30 in-lbs. Perform a pressure test as described in paragraph 8.6. Clean the mounting flange area of the base. Place the fixture into the base. Apply Loctite 242 (P/N 10048-30), per manufacturer's instructions, to both mounting bolts and immediately torque them to 225 -0+10 in-lbs.



Note – The groove is designed to be wider than the o-ring. This provides room for the displacement of the o-ring when compressed between the housing and mating surface. Properly tightened screws are important in obtaining a complete seal.

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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 Kit P/N 21126-X contains all necessary parts to change a lens. **Remove and secure power to the fixture.** Separate the Optical Assembly from the outer ring by removing the two bolts. Turn the Optical Assembly upside down and remove the four screws holding the inner cover to the light housing. Remove the two lens retaining bracket screws from the light housing. Remove the lens-retaining bracket and discard the lens-retaining gasket. Firmly push the lens/boot assembly from the outside of the light housing; discard the old lens and boot. Thoroughly clean the lens opening with isopropyl alcohol and allow 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 light housing. The screw-hole patterns in the inner cover and light housing are offset to insure proper alignment. Torque the mounting screws to 30 in-lbs. Perform a pressure test per paragraph 8.6. Clean the mounting flange area of the support ring. Place the Optical Assembly into the support ring. Apply Loctite 242 (P/N 10048-30), per manufacturer's instructions, to both mounting bolts and immediately torque them to 225 -0+10 in-lbs.

8.5 Feed-thru Replacement

Remove and secure power to the fixture. Separate the Optical Assembly from the outer ring by removing the two bolts. Turn the Optical Assembly upside down and remove the four screws holding the inner cover to the light housing. Disconnect the Power Supply leads from the feed-thru terminals. Remove the feed-thru by unscrewing the retaining collar. Clean the mounting surfaces with Isopropyl Alcohol and allow to dry. Apply a thin coat of Dow Corning FS 1292 grease to the mounting flange of a new feed-thru. Apply a drop of Loctite 242 to the feed-thru adapter threads. Screw the feed-thru retaining collar onto the adapter; refer to Figure 5 for proper inner cover/feed-thru orientation. Torque the retaining collar to 30 in-lbs. Assemble the inner cover onto the light housing. The screw hole patterns in the inner cover and light housing are offset to insure proper alignment. Torque the mounting screws to 30 in-lbs. Perform a pressure test per paragraph 8.6. Clean the mounting flange area of the support ring. Place the Optical Assembly into the support ring. Apply Loctite 242 (P/N 10048-30), per manufacturer's instructions, to both mounting bolts and immediately torque them to 225 -0+10 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 lens, inner cover seal, and feed-thru adapter for leaks. Relieve the internal air pressure before installing the fixture or attempting to repair a leak.

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WARNING – 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 External Support Ring Gasket Replacement

Every time a light fixture with the optional external support ring gasket is removed from the support ring, this gasket that is on the outside surface of the inner cover should be examined and replaced if necessary. Any gasket that is stretched, torn, has a permanent set or some other defect, will allow water to enter the light base. Remove the old gasket from the inner cover by carefully scraping. Take care not to damage the inner cover. Form a thin bead of high temperature silicone adhesive, such as GE RTV 106, on the inner cover sealing surface. Position the new gasket (P/N 21180) on the inner cover in the same location as the old gasket. Allow the silicone to cure for 4 to 12 hours. Cure times depend on the amount of silicone used, ambient temperature, and relative humidity. Apply a thin coat of Dow Corning FS 1292 grease over the entire outside surface of the gasket before placing in the support ring. Install new stainless steel split-ring lock washers. Apply Loctite 242 (P/N 10048-30), per manufacturer's instructions, to both mounting bolts and immediately torque them to 225 -0 =10 in-lbs.

8.8 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.

8.9 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 fixtures 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)

- 8.9.1 Regular cleaning is necessary in order to insure that inset lighting fixtures operate at maximum efficiency. The lens and channel in front of the lens 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.
- 8.9.2 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 than 5 mph or have the blades lifted clear of the fixtures. Recommended snow removal techniques are described in AC 150/5200-23.
- 8.9.3 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.

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- 8.9.4 Optical Assembly 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.
- 8.9.5 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 optical housing o-ring (100035-62), See Section 8.3.

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9 Parts List

ITEM	PART NUMBER	L-852A	L-852C	DESCRIPTION
1	21118-3	1	1	HOUSING, BOTTOM, STYLE III RCL
2	10000-471	1	1	SCREW, PAN HD TYPE 1A CROSS, GREEN, #10-32 x 3/8 LG, 18-8 SS
3	10037-795	1	1	FITTING, PRESSURE TEST, 1/8 NPT
4	21109	1	1	PLUG, THREADED, FEED-THRU, ALUMINUM
5	21120	1	1	ADAPTER, THREADED, FEED-THRU, ALUMINUM
6	10035-61	2	2	O-RING
7	21105-2	1	1	HOUSING, OPTICAL, STYLE III RCL
8	10035-62	1	1	O-RING, 3/32 THK, 6.25 I.D., POLYURETHANE, 90 DUROMETER
9	21102-X*	2	2	LENS, STYLE III RCL - COATED LENS
10	21103*	2	2	BOOT, LENS, STYLE III RCL
11	21101*	2	2	GASKET, LENS RETAINING BRACKET
12	21100	2	2	LENS RETAINING BRACKET
13	10000-468	4	4	SCREW, SEMS, PAN HD TYPE 1A CROSS/DRI-LOC, #10-32 x 1/2 LG, 18-8 SS
14	21239	1	1	BRACKET, UNIVERSAL
15	10047-2888	1	1	PK30D 45W C-8 LAMP WITH FEMALE CONNECTORS
16	21242	2	2	BRACKET, LOCKING
17	10000-469	5	5	SCREW, SEMS, PAN HD TYPE 1A CROSS/DRI-LOC, #8-32 x 3/8 LG, 18-8 SS
18	10000-470	4	4	SCREW, 100° FLAT HD/DRI-LOC, #10-32 x 7/16 LG, 18-8 SS
19	10000-480	2	2	SCREW, 100° FLAT HD/DRI-LOC, #8-32 x 3/8 LG, 18-8 SS
20	21240	2	0	REFLECTOR, TYPE A
21	21241	0	2	REFLECTOR, TYPE C
22	21243	2	2	BOOT, REFLECTOR
23	21112	1	1	SUPPORT RING, MACHINED/PLATED, DUCTILE IRON
24	10038-43	2	2	PIN, DOWEL, 3/8 DIA x 3/4 LG, 18-8 SS
25	21122	1	1	FEED-THRU ASS'Y, 1 LAMP/1 PLUG, ALUMINUM
26	11A12-037D	2	2	WASHER, LOCK, 3/8, 18-8 SS
27	10C01-037D40	2	2	BOLT, HEX, 3/8-16x1-1/2 LG, 18-8 SS
28	10048-30	A/R	A/R	LOCTITE 242
29	21248	1	1	LAMP LABEL
30	10048-64	A/R	A/R	WARRANTY COMPOUND
31	10048-25	A/R	A/R	SILICONE GREASE
32	21144	1	1	NAME PLATE
33	10042-34	1	1	SHIPPING CARTON
34	2410	1	1	INSTRUCTION MANUAL
35	21180	A/R	A/R	EXTERNAL SUPPORT RING GASKET (OPTIONAL)

*** These parts are included in a P/N 21126-X Lens Replacement Kit.
Each kit contains parts to replace one lens.**

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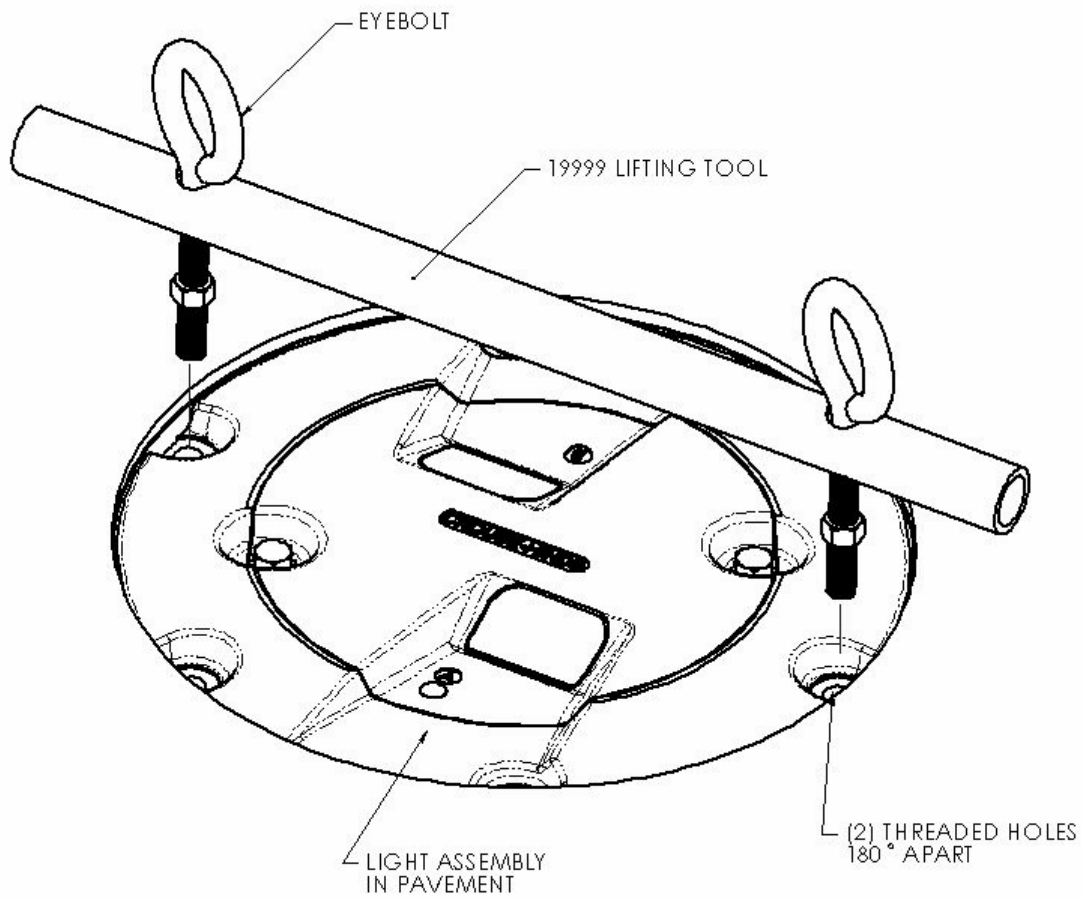


Figure 1: 19999 Installation (Lifting) Tool

TCL Fixture Shown

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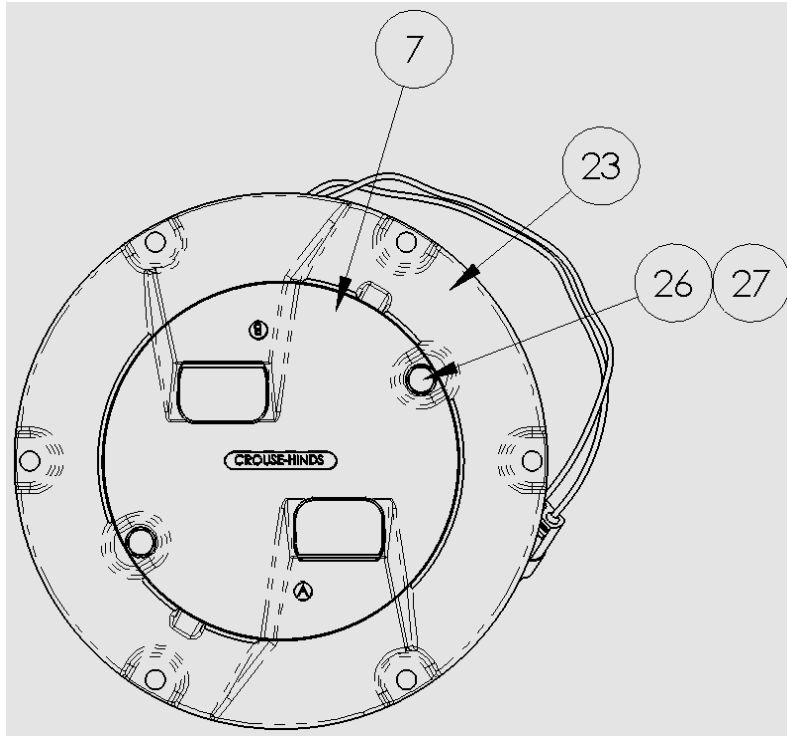


Figure 2: Top View of Fixture

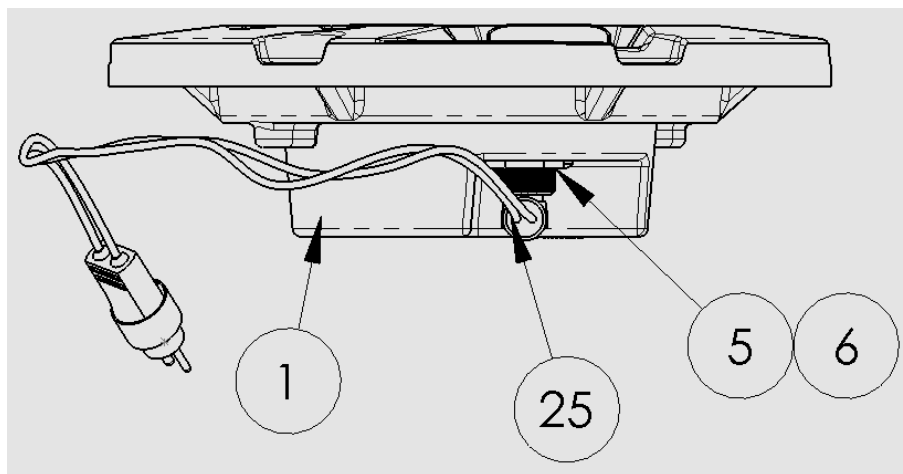


Figure 3: Side View of Fixture

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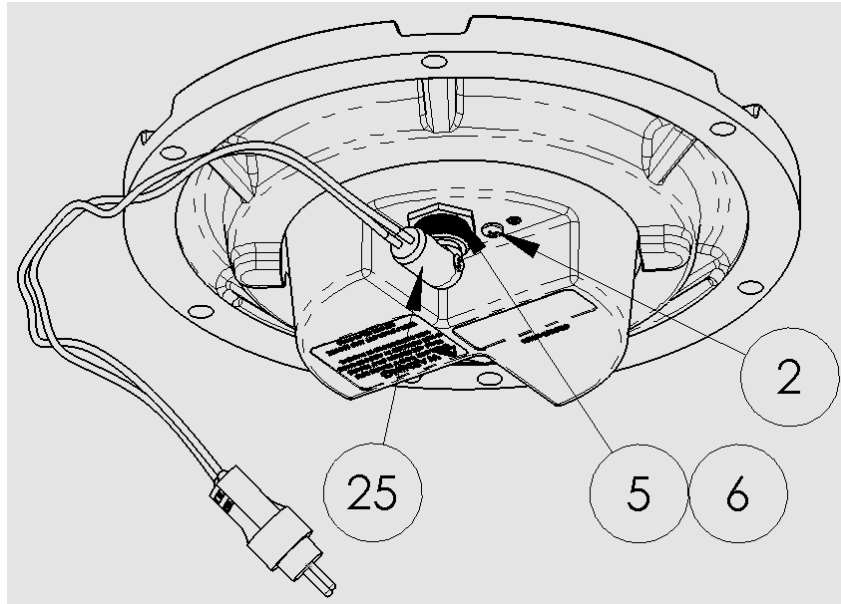


Figure 4: Feed-thru Adapter Detail

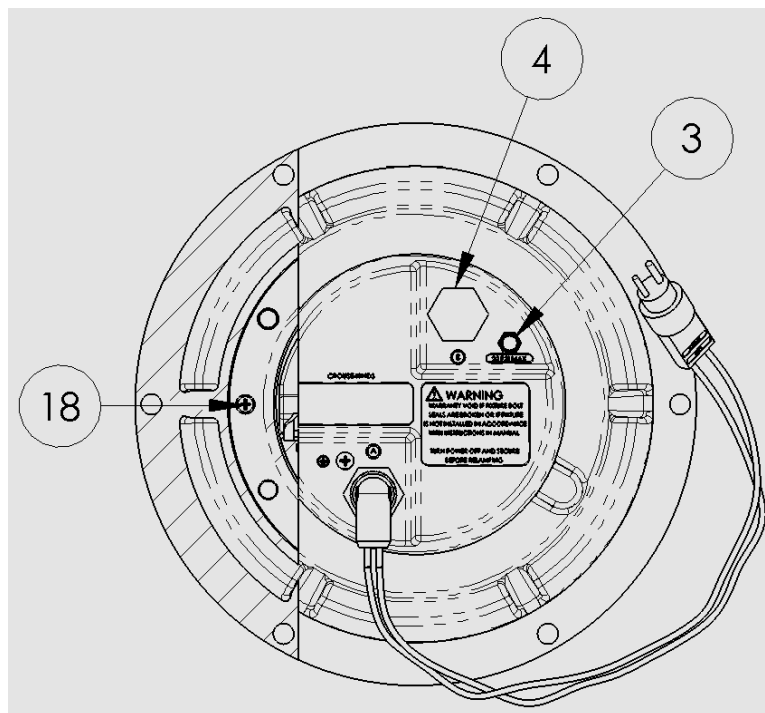


Figure 5: Bottom View of Fixture

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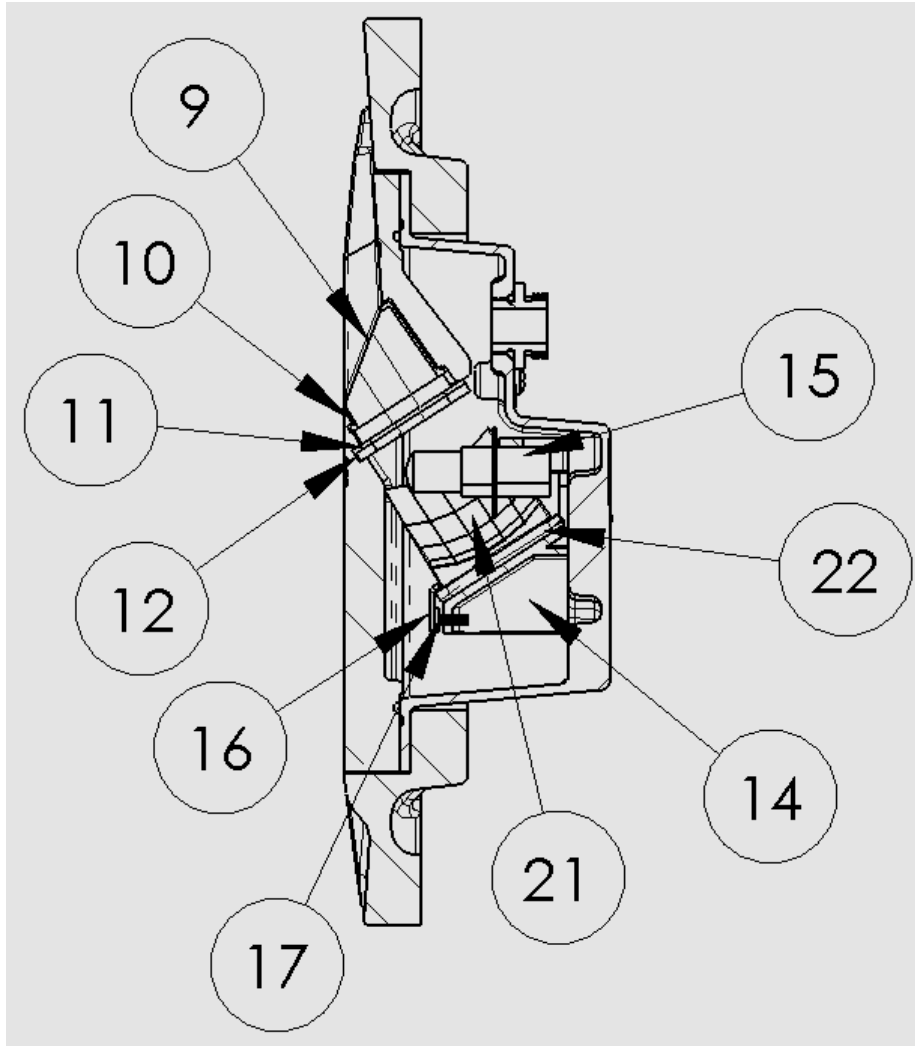


Figure 6: Sectioned View of Fixture

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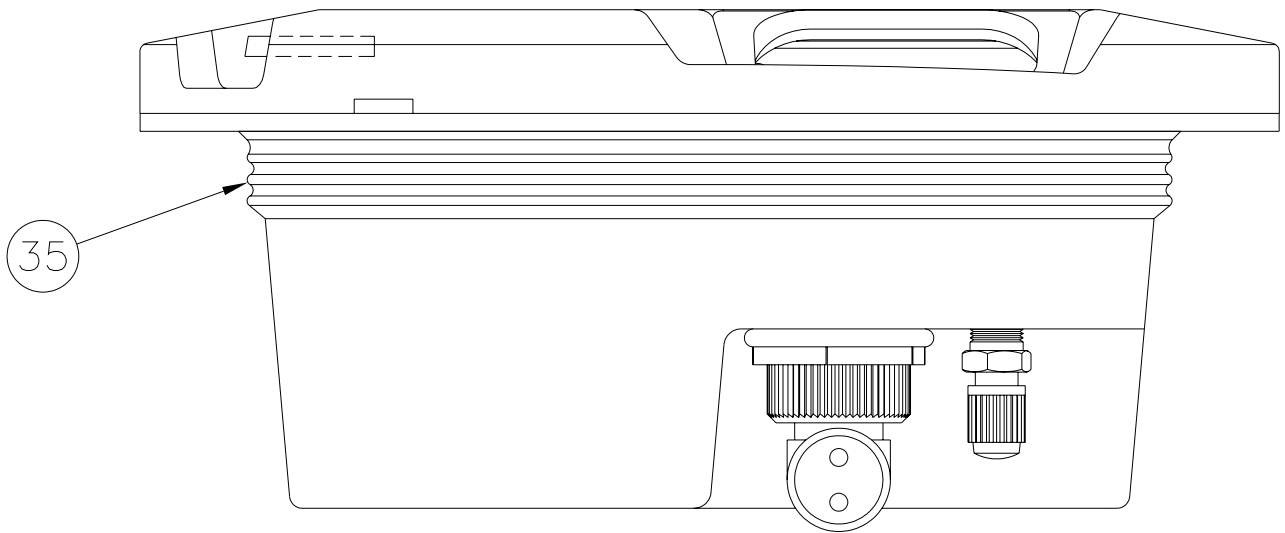


Figure 7 Side View of Fixture with Optional External Support Ring Gasket