



# FAA L-858 Kit to Replace both the Light Source and PCB with LED Light Bars

Size 1, 2, 3, 4 and, 5 Internally Illuminated

## User Manual

ALN158, Rev. I, 2023/09/29





## A.0 Disclaimer / Standard Warranty

### CE certification

The equipment listed as CE certified means that the product complies with the essential requirements concerning safety and hygiene. The European directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

### ETL certification

The equipment listed as ETL certified means that the product complies with the essential requirements concerning safety and C22.2 No.180:13 (R2018) regulations. The CSA directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

### All Products Guarantee

ADB SAFEGATE will correct by repair or replacement per the applicable guarantee below, at its option, equipment or parts which fail because of mechanical, electrical or physical defects, provided that the goods have been properly handled and stored prior to installation, properly installed and properly operated after installation, and provided further that Buyer gives ADB SAFEGATE written notice of such defects after delivery of the goods to Buyer. Refer to the Safety section for more information on Material Handling Precautions and Storage precautions that must be followed.

ADB SAFEGATE reserves the right to examine goods upon which a claim is made. Said goods must be presented in the same condition as when the defect therein was discovered. ADB SAFEGATE further reserves the right to require the return of such goods to establish any claim.

ADB SAFEGATE's obligation under this guarantee is limited to making repair or replacement within a reasonable time after receipt of such written notice and does not include any other costs such as the cost of removal of defective part, installation of repaired product, labor or consequential damages of any kind, the exclusive remedy being to require such new parts to be furnished.

ADB SAFEGATE's liability under no circumstances will exceed the contract price of goods claimed to be defective. Any returns under this guarantee are to be on a transportation charges prepaid basis. For products not manufactured by, but sold by ADB SAFEGATE, warranty is limited to that extended by the original manufacturer. This is ADB SAFEGATE's sole guarantee and warranty with respect to the goods; there are no express warranties or warranties of fitness for any particular purpose or any implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein. All such warranties being expressly disclaimed.

### Standard Products Guarantee

Products manufactured by ADB SAFEGATE are guaranteed against mechanical, electrical, and physical defects (excluding lamps) which may occur during proper and normal use for a period of two years from the date of ex-works delivery, and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.



#### Note

See your applicable sales agreement for a complete warranty description.

Replaced or repaired equipment under warranty falls into the warranty of the original delivery. No new warranty period is started for these replaced or repaired products.

### FAA Certified products manufactured by ADB SAFEGATE

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ADB SAFEGATE LED products (with the exception of obstruction lighting) are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition). These FAA certified constant current (series) powered LED products must be installed, interfaced and powered with and through products certified under the FAA Airfield Lighting Equipment Program (ALECP) to be included in this 4 (four) year warranty. This includes, but is not limited to, interface with products such as Base Cans, Isolation Transformers, Connectors, Wiring, and Constant Current Regulators.



## Note

See your sales order contract for a complete warranty description.

Replaced or repaired equipment under warranty falls into the warranty of the original delivery. No new warranty period is started for these replaced or repaired products.

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## Liability

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### WARNING

Use of the equipment in ways other than described in the catalog leaflet and the manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in the manual.

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ADB SAFEGATE cannot be held responsible for injuries or damages resulting from non-standard, unintended uses of its equipment. The equipment is designed and intended only for the purpose described in the manual. Uses not described in the manual are considered unintended uses and may result in serious personal injury, death or property damage.

Unintended uses, includes the following actions:

- Making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine ADB SAFEGATE replacement parts or accessories.
- Failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards if not in contradiction with the general rules.
- Using materials or auxiliary equipment that are inappropriate or incompatible with your ADB SAFEGATE equipment.
- Allowing unskilled personnel to perform any task on or with the equipment.

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# 1.0 Safety

## Introduction to Safety

This section contains general safety instructions for installing and using ADB SAFEGATE equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate.

## 1.1 Safety Messages

### HAZARD Icons used in the manual

For all HAZARD symbols in use, see the Safety section. All symbols must comply with ISO and ANSI standards.

Carefully read and observe all safety instructions in this manual, which alert you to safety hazards and conditions that may result in personal injury, death or property and equipment damage and are accompanied by the symbol shown below.



#### WARNING

Failure to observe a warning may result in personal injury, death or equipment damage.



#### DANGER - Risk of electrical shock or ARC FLASH

Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage. ARC Flash may cause blindness, severe burns or death.



#### WARNING - Wear personal protective equipment

Failure to observe may result in serious injury.



#### WARNING - Do not touch

Failure to observe this warning may result in personal injury, death, or equipment damage.



#### CAUTION

Failure to observe a caution may result in equipment damage.



#### ELECTROSTATIC SENSITIVE DEVICES

This equipment may contain electrostatic devices.

## Qualified Personnel



#### Important Information

The term **qualified personnel** is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements.

Always use required personal protective equipment (PPE) and follow safe electrical work practice.

### 1.1.1 Introduction to Safety

## CAUTION

### Unsafe Equipment Use

This equipment may contain electrostatic devices, hazardous voltages and sharp edges on components

- Read installation instructions in their entirety before starting installation.
- Become familiar with the general safety instructions in this section of the manual before installing, operating, maintaining or repairing this equipment.
- Read and carefully follow the instructions throughout this manual for performing specific tasks and working with specific equipment.
- Make this manual available to personnel installing, operating, maintaining or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards and government or other regulatory agencies.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning prior to returning power to the circuit.



**Failure to follow this instruction can result in serious injury or equipment damage**

### Additional Reference Materials

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#### Important Information

- IEC - International Standards and Conformity Assessment for all electrical, electronic and related technologies.
  - IEC 60364 - Electrical Installations in Buildings.
  - CSA - C22.2 No.180:13 (R2018) Series isolating transformers for airport lighting
  - FAA Advisory: AC 150/5340-26 (current edition), Maintenance of Airport Visual Aid Facilities.
  - Maintenance personnel must refer to the maintenance procedure described in the ICAO Airport Services Manual, Part 9.
  - ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
  - National and local electrical codes and standards.
-



### 1.1.2 Intended Use



#### CAUTION

##### **Use this equipment as intended by the manufacturer**

This equipment is designed to perform a specific function, do not use this equipment for other purposes

- Using this equipment in ways other than described in this manual may result in personal injury, death or property and equipment damage. Use this equipment only as described in this manual.

**Failure to follow this instruction can result in serious injury or equipment damage**

### 1.1.3 Material Handling Precautions: Storage



#### CAUTION

##### **Improper Storage**

Store this equipment properly

- If equipment is to be stored prior to installation, it must be protected from the weather and kept free of condensation and dust.

**Failure to follow this instruction can result in equipment damage**

### 1.1.4 Operation Safety



#### CAUTION

##### **Improper Operation**

Do Not Operate this equipment other than as specified by the manufacturer

- Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.
- Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.
- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

**Failure to follow these instructions can result in equipment damage**

### 1.1.5 Maintenance Safety

#### **DANGER**

##### **Electric Shock Hazard**

This equipment may contain electrostatic devices

- Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.
- 



**Failure to follow these instructions can result in death or equipment damage**

### 1.1.6 Material Handling Precautions, ESD



#### **CAUTION**

##### **Electrostatic Sensitive Devices**

This equipment may contain electrostatic devices

- Protect from electrostatic discharge.
- Electronic modules and components should be touched only when this is unavoidable e.g. soldering, replacement.
- Before touching any component of the cabinet you shall bring your body to the same potential as the cabinet by touching a conductive earthed part of the cabinet.
- Electronic modules or components must not be brought in contact with highly insulating materials such as plastic sheets, synthetic fiber clothing. They must be laid down on conductive surfaces.
- The tip of the soldering iron must be grounded.
- Electronic modules and components must be stored and transported in conductive packing.

**Failure to follow this instruction can result in equipment damage**

### 1.1.7 Arc Flash and Electric Shock Hazard



## DANGER

### Series Circuits have Hazardous Voltages

This equipment produces high voltages to maintain the specified current - Do NOT Disconnect while energized.

- Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.
- Only persons who are properly trained and familiar with ADB SAFEGATE equipment are permitted to service this equipment.
- An open airfield current circuit is capable of generating >5000 Vac and may appear OFF to a meter.
- Never unplug a device from a constant current circuit while it is operating; Arc flash may result.
- Disconnect and lock out electrical power.
- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in the product manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved ADB SAFEGATE replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Check the interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with airfield electrical equipment.

**Failure to follow these instructions can result in death or equipment damage**

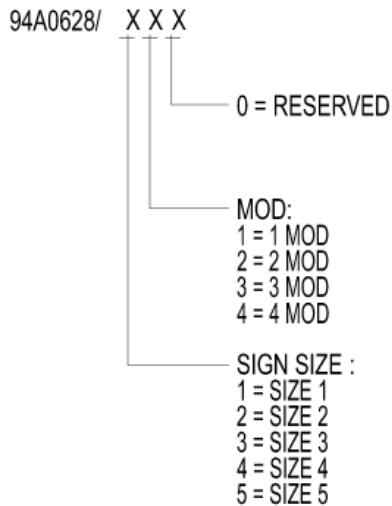


## 2.0 94A0628-XXX LED Sign Upgrade Kit

Incandescent, Fluorescent or LED Light Tube Sign Upgrade to LED Light Bar Sign Kits

These kits are designed to upgrade an incandescent lamp, fluorescent lamp or LED Light Tube sign to an LED Light Bar sign.

**Figure 1: LED Light Bar Kit Ordering Codes**



### Note

The existing larger wattage I-830 transformer may be reused on retrofitted LED signs.

The Low VA Halogen Style 5, 5.5 A, size 1, 1 module sign using a L-830 or L-831 45 W transformer must be replaced the appropriate L-830 or L-831 65 W transformer. See manual 96A0455 "Sign Load & Transformer Requirements" for details.

The kit includes all the parts required to complete the upgrade.

### Tools required but not included

- A #2 phillips screwdriver,
- A #2 flat blade screwdriver,
- A (.312 in) 5/16-inch socket,
- A (14 mm) (.5 in) 1/2-inch socket,
- A (.187 in) 3/16-inch drill bit,
- A (.218 in) 7/32-inch drill bit,
- Electric drill motor
- Wire cutters
- Center punch
- Knee pads
- Leather gloves
- Drill Template 60A4263 (as needed)

## 2.1 Parts Supplied:

See [Figure 25](#) for the Assembly Diagram

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	44A6921/5	LED TUBE SIGN TERMINATOR ASSY.	1
2	44A7260-010	CURRENT DRIVEN BOOST POWER SUPPLY W/BACKET	1
3	44A7341/10	LED LT GEN-2 SIGN GND LEAD ASSY, 10"	1
4	48A0442-XX	LED LIGHT BAR GEN 2	1/mod <sup>1</sup>
5	64A0191/4	8-32 × 1/4 PAN HD PHIL	2
6	64A0191/6	8-32 × 3/8 PAN HD PHIL	4
7	64A1023/8	10-32 × 1/2 HX WSHR HD SELF TAP 18-8 S.S.	4
8	66A0026/15	#8 SPLIT LOCKWASHER	4
9	MR00042-000-001	THERMAL SILICONE GREASE (4g)	1

### Notes

<sup>1</sup> Size 4 signs require qty 2 LED light bars.

## 2.2 About this manual

The manual shows the information necessary to:

- Remove the old Incandescent, Florescent or LED Light Tube Sign components necessary to upgrade to an LED Light Bar Sign.
- Install the Kit components necessary to make an LED Light Bar Sign.

### 2.2.1 How to work with the manual

1. Become familiar with the structure and content.
2. Carry out the actions completely and in the given sequence.

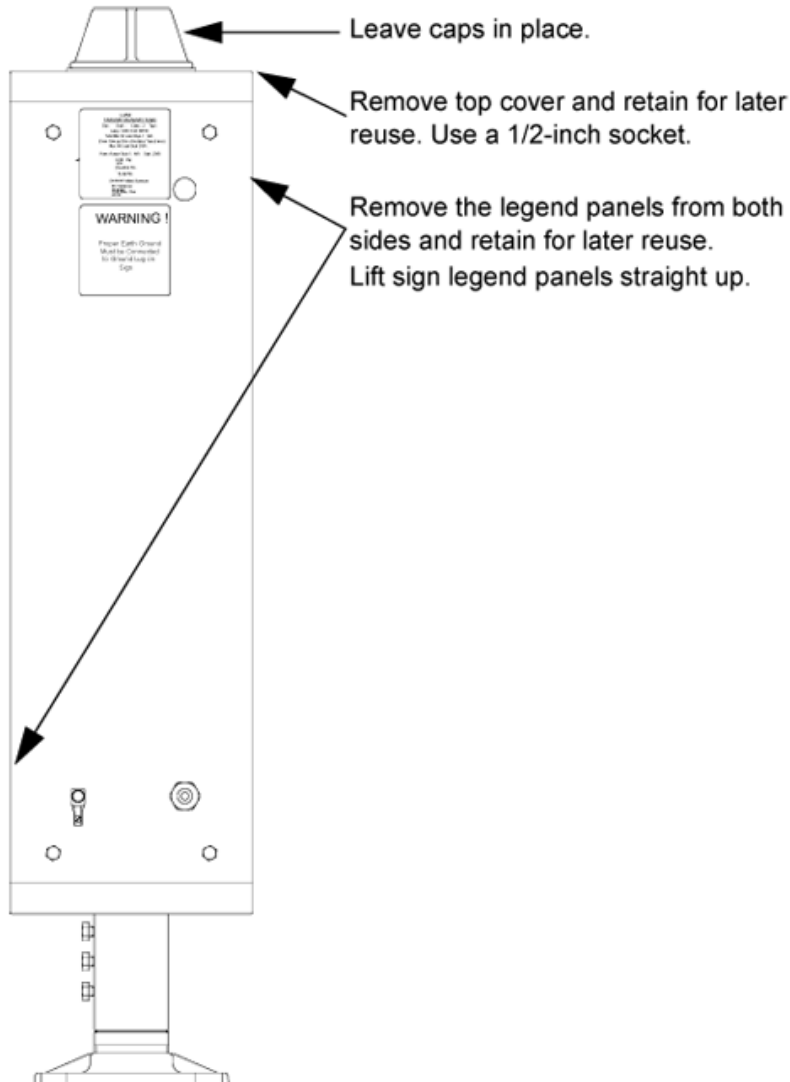
## 3.0 Incandescent Sign Parts Removal

Also refer to manual 96A0286 for incandescent signs

### 3.1 Remove the Covers

Remove the top covers and the sign legend panels and set aside for later reassembly.

**Figure 2: Sign Assembly - Side View**



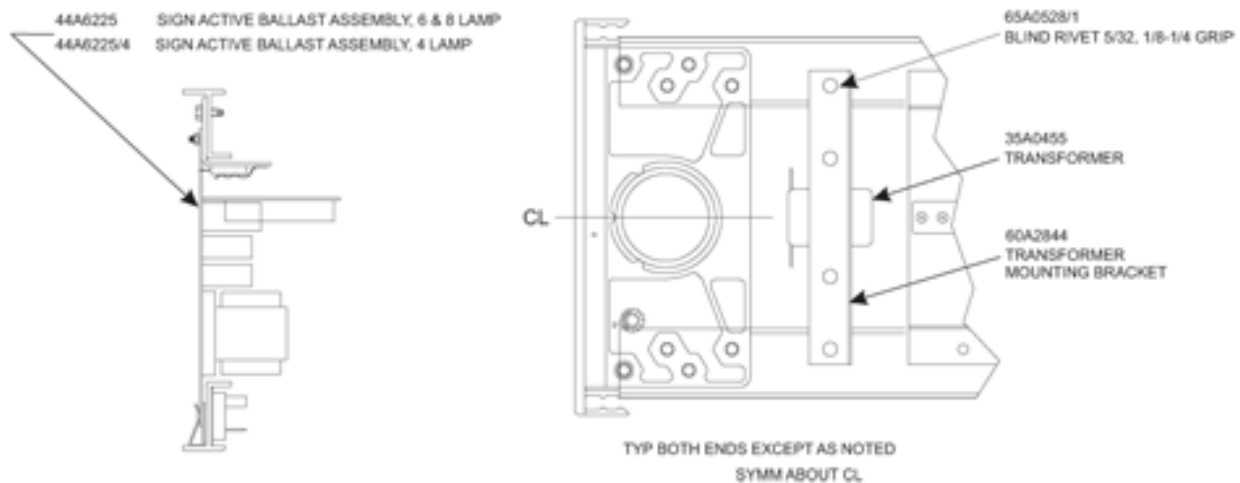
**Figure 3: Sign - Face View, Covers Removed**



### 3.2 Remove the Sign Electronics

Remove all non-structural interior components including transformers, lamps, lamp holder assemblies, reflectors, electronic assemblies and wiring (except for incoming power leads from transformer).

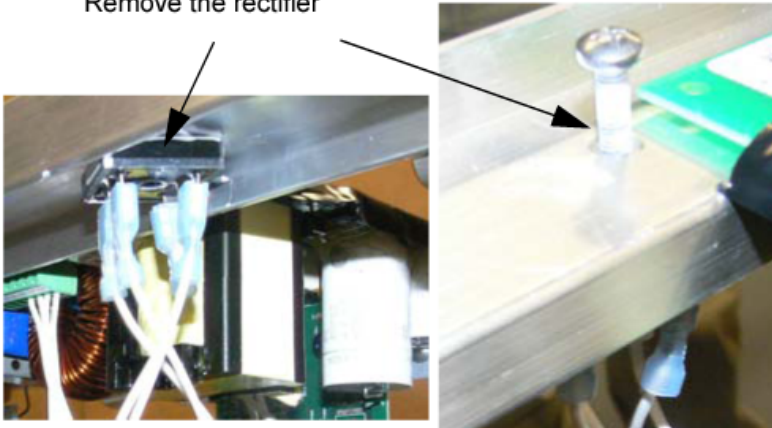
**Figure 4: Parts Removal Diagrams**





**Figure 5: Remove the Incandescent Sign Rectifier**

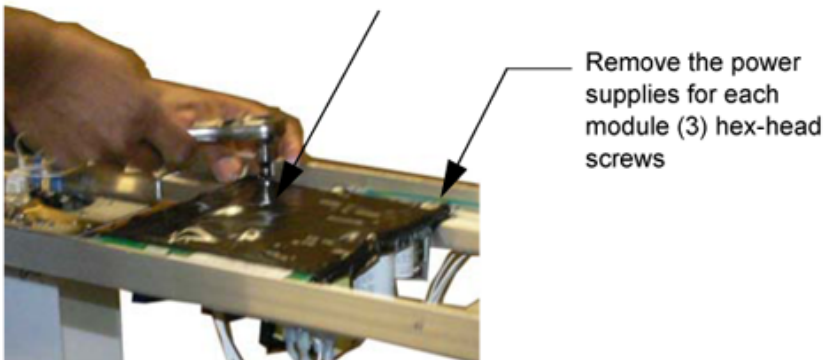
Remove the rectifier



Disconnect the wires from the rectifier assembly. Remove the rectifier by removing the 6/32 x 1-inch Phillips Pan Head Screw.

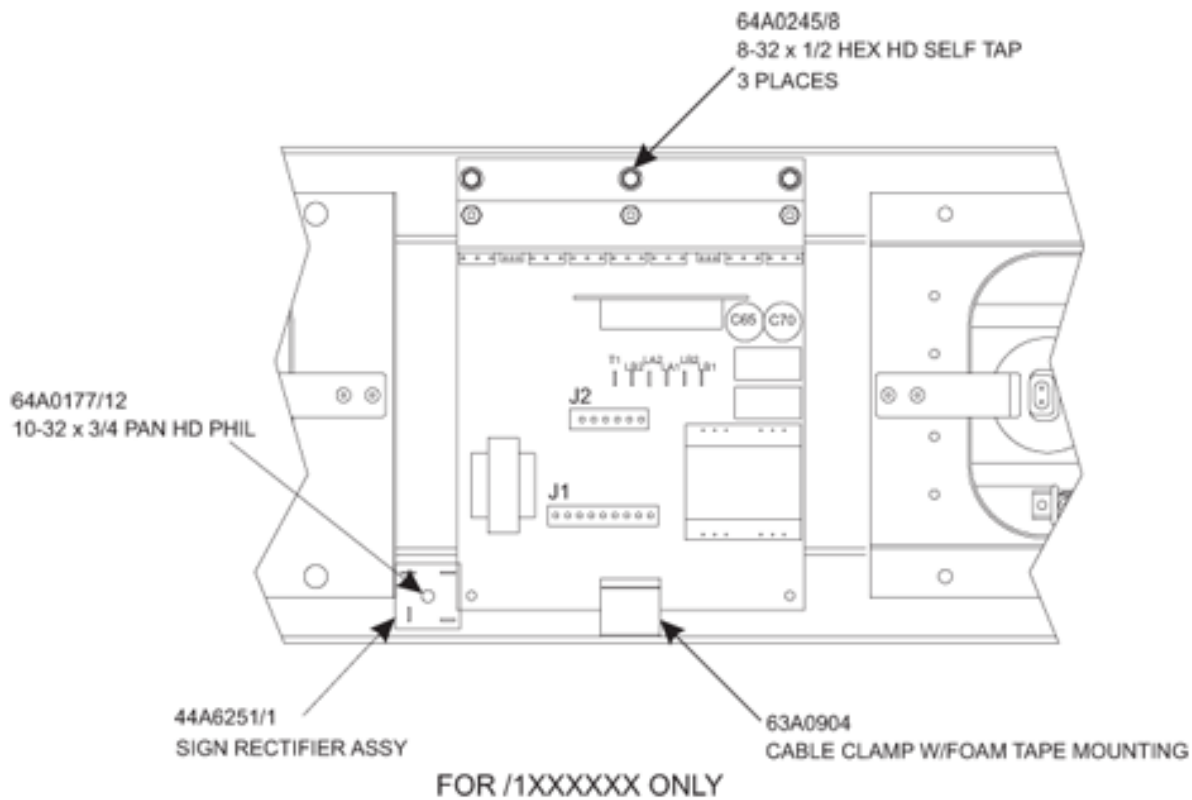
**Figure 6: Removing the Incandescent Power Supply**

Use a 5/16 socket



Disconnect all the wires from the power supply. Use a 5/16 socket to remove the power supply hex-head retaining screws. Place the power supply in an antistatic bag for storage or discard properly.

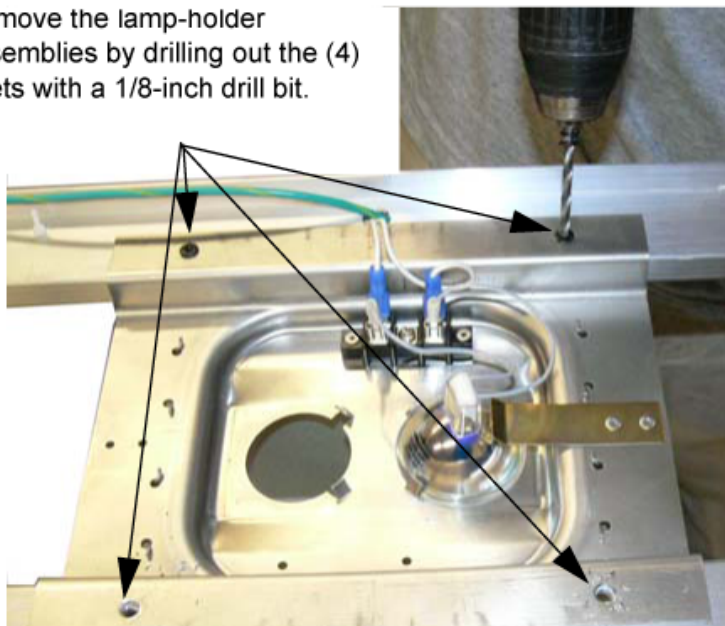
**Figure 7: Diagram of the top rail**



### 3.3 Remove the Lamps and Reflectors

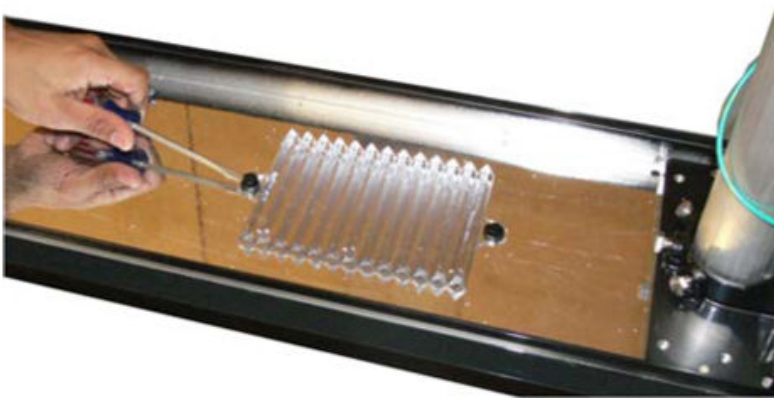
**Figure 8: Removing the Lamp Assemblies**

Remove the lamp-holder assemblies by drilling out the (4) rivets with a 1/8-inch drill bit.



Drill out the rivets. Clean the area of filings. Remove the lamp assemblies and set aside in a box or safe area for storage or disposal.

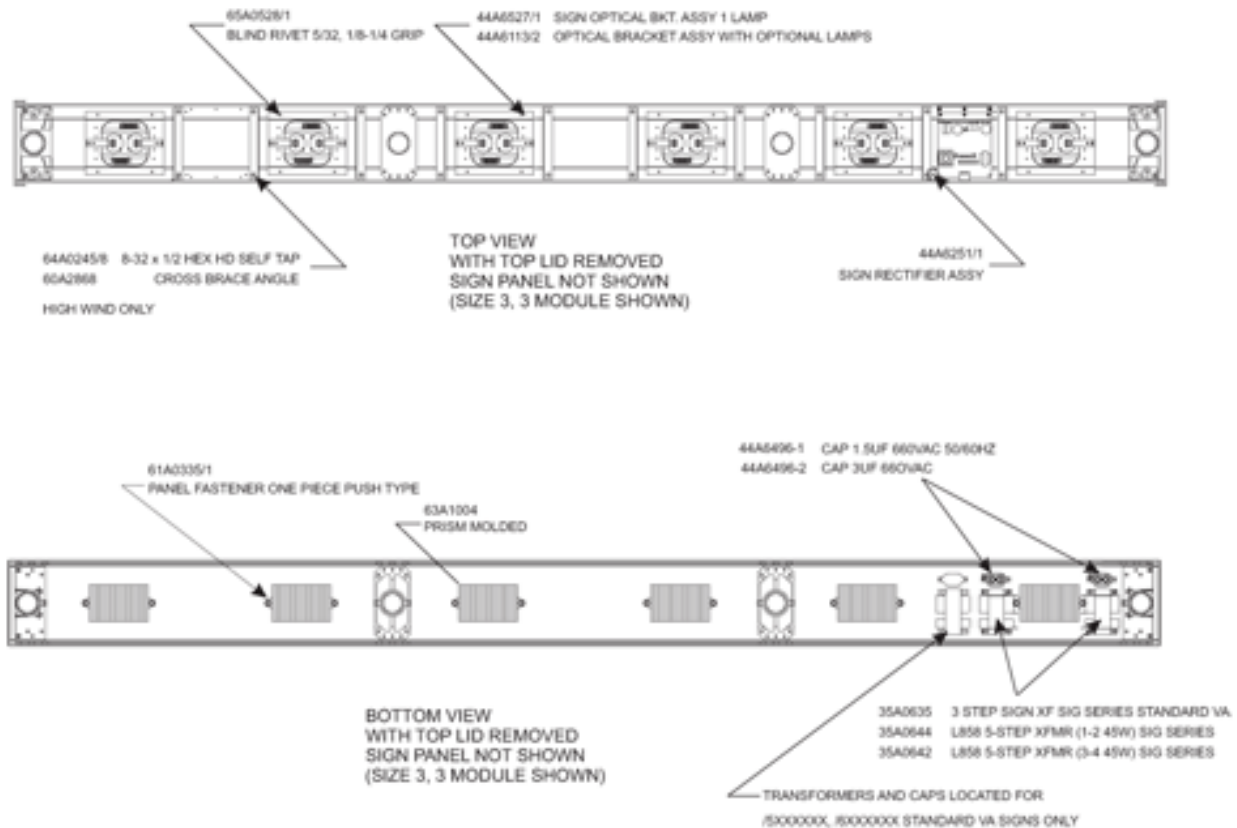
**Figure 9: Removing the Bottom Reflectors**



Remove the reflectors. Set aside in a box or safe area for storage or disposal.

Remove the transformers (if used) and the capacitors (if used).

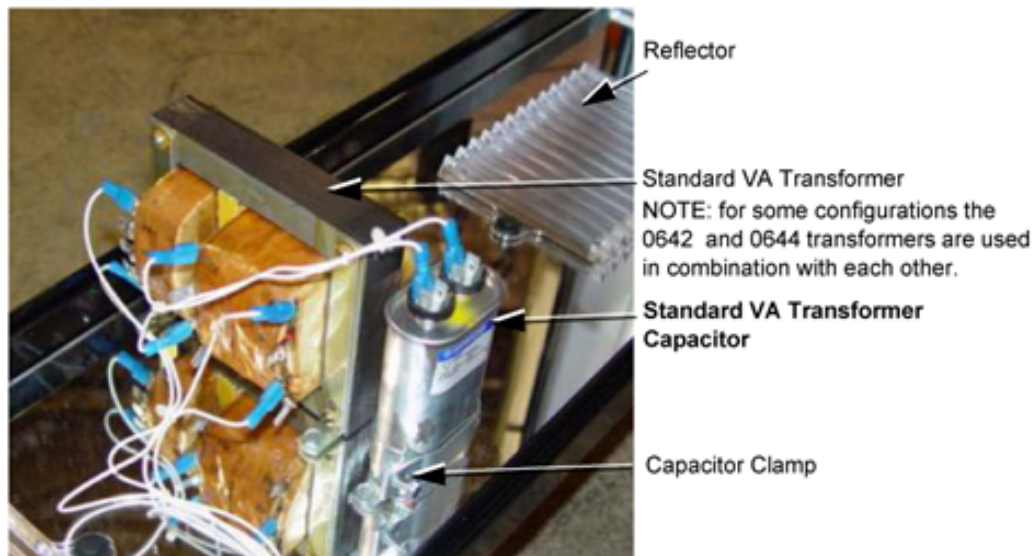
**Figure 10: Top and Bottom Components Diagram**



### 3.4 Standard VA Transformer and Capacitor Removal

Remove the Reflectors, Transformers, Capacitors and the Capacitor Clamps.

**Figure 11: Regular VA Transformer and CAP**



Proceed to the [LED Light Bar Kit Installation](#).

### 3.5 Fluorescent Lamp, Ballast, and Power Supply Removal

**Also refer to manual 96A0286**

1. Remove power to the sign circuit by shutting down the CCR.
2. The legend panels must be removed. The sign lid must be removed. (Note: If lid has lamp covers on the top of the lid, the fluorescent lamps are not accessible through these covers). Follow the directions below to remove the lamps. Also, the ballast, DC power supply, and the power transformers need to be removed. Only the incoming power cord will remain after this procedure.
3. Remove the lamps by turning the ¼-turn screw counter clockwise to free the lamp bracket. Remove the lamp bracket and wire harness up through opening in the bracket mounting plate.

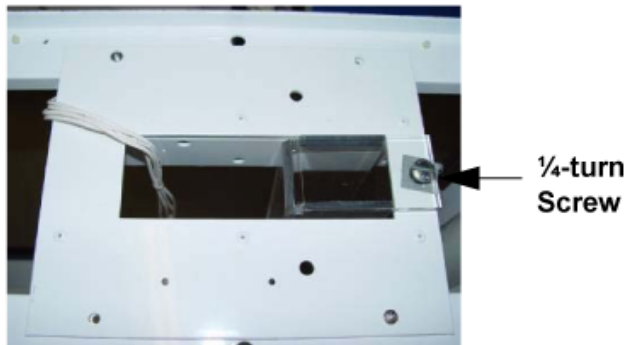


#### Note

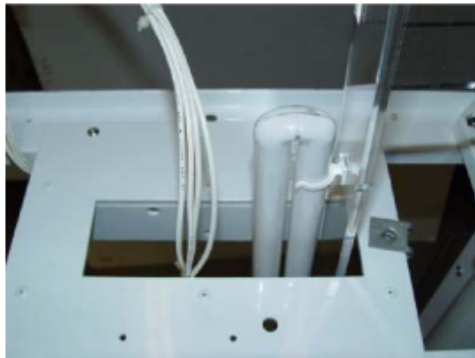
The lamps may have cable ties used to hold the lamps in place during shipping. Remove these cable ties prior to lamp removal.

4. Remove the lamp from its socket by grasping the base of the lamp and lifting the lamp up and rocking it slightly left and right while lifting to free it from the socket. Pull the lamp free from the lamp clip located near the top of the lamp. See [Figure 12](#) thru [Figure 14](#).

**Figure 12: Lamp Bracket ¼-turn Screw**



**Figure 13: Lamp Bracket Removal**

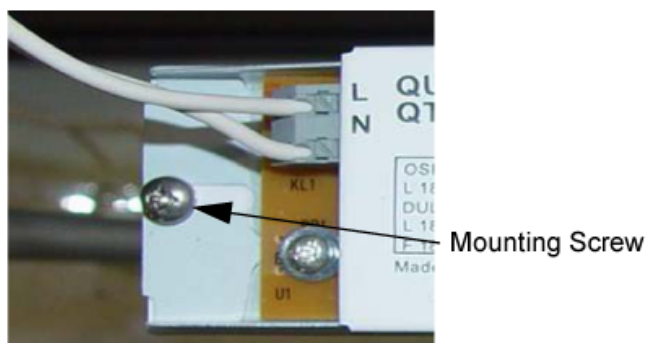


**Figure 14: Lamp Socket**



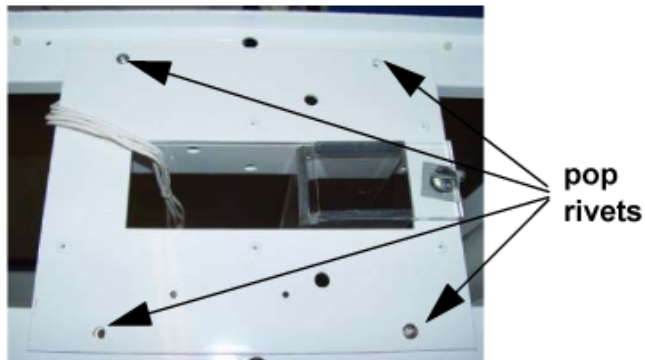
5. To remove the lamp ballast, remove the 2 mounting screws, one screw at each end of the ballast that secures the ballast to the mounting plate. Disconnect the power leads located at each end of the ballast. See [Figure 15](#).

**Figure 15: Ballast Mounting**



6. Remove the lamp assembly mounting bracket by drilling out the 4 pop rivets. Use a 1/8" drill bit. Clean off any burs from the frame top, with the tip of a screw driver.

**Figure 16: Lamp Assembly Mounting Bracket**



7. To remove the DC Power Supply, disconnect the 4 quick disconnects and then using a screwdriver remove the two mounting screws located on the outside surface of the sign end panel. See [Figure 17](#).

**Figure 17: DC Power Supply 44A6631**



8. Proceed to the [LED Light Bar Kit Installation](#).



## 4.0 LED Light Tube and Power Supply Removal

Also refer to manual 96A0402 (obsolete)

1. Remove power to the sign circuit by shutting down the CCR.
2. The legend panels must be removed. The sign lid must be removed. (Note: If lid has lamp covers on the top of the lid, leave them in place).

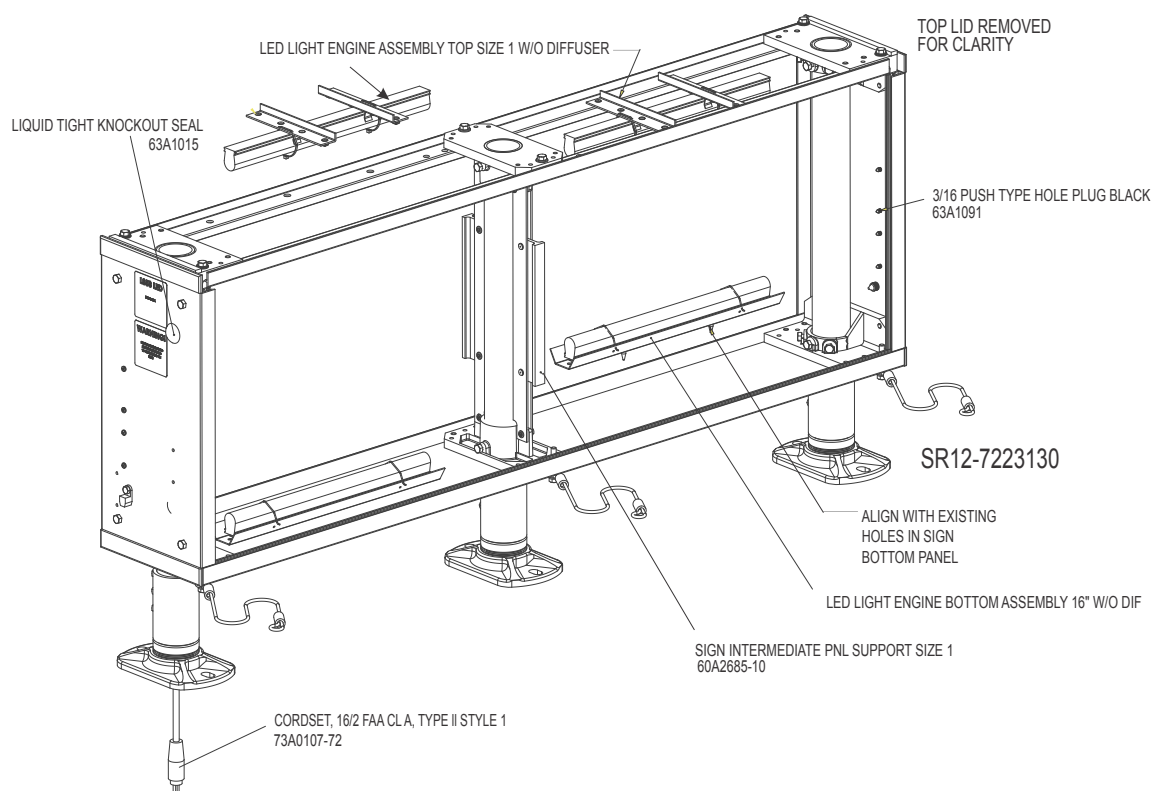


### Note

Follow the directions below to remove the LED Light Tubes and Power Supply. The wiring between the Light Tubes and the Power Supply must also be removed.

3. Remove the wires between the power supply and the light tubes. Remove the resistor in the Size 1 sign if used.
4. Disconnect the incoming power wires to the power supply, including the ground wires.
5. Remove the power supply, EMI filters (if present) and capacitors (if present) from the sign wall. 4 screws mount the power supply as shown in [Figure 18](#).
6. Remove the light tubes from the bottom and the top of the sign fixture. See [Figure 18](#).
7. Remove the brackets supporting the light tubes across the top of the sign fixture.
8. Proceed to the [LED Light Bar Kit Installation](#).

**Figure 18: Light Tube Sign Parts Removal**



### Note

You may wish to retain the power supply and working light tubes etc. for spares.





## 5.0 LED Light Panel and Power Supply Removal

Also refer to manual 96A0377

1. Remove power to the sign circuit by shutting down the CCR.
2. The legend panels must be removed. The sign lid must be removed. (Note: If lid has lamp covers on the top of the lid, leave them in place).

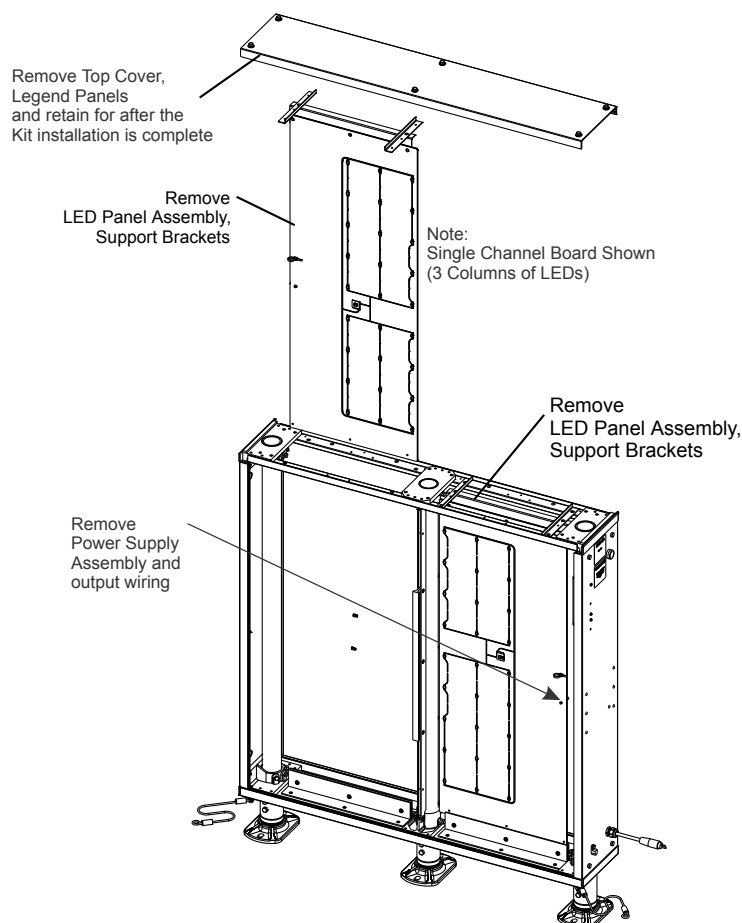


### Note

Follow the directions below to remove the LED Light Tubes and Power Supply. The wiring between the Light Tubes and the Power Supply must also be removed.

3. Remove the wires between the power supply and the light panels.
4. Disconnect the incoming power wires to the power supply, including the ground wires.
5. Remove the power supply, EMI filters (if present) and capacitors (if present) from the sign wall. 4 screws mount the power supply as shown in [Figure 19](#).
6. Remove the light panels and support brackets from the sign fixture. See [Figure 19](#).
7. Remove the cross bar supporting the light panels of the sign fixture.
8. Proceed to the [LED Light Bar Kit Installation](#).

**Figure 19: Light Panel Sign Parts Removal**





**Note**

You may wish to retain the power supply and working light panels etc. for spares.

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## 6.0 LED Light Bar Kit Installation

Figure 20: Size 1 Signs

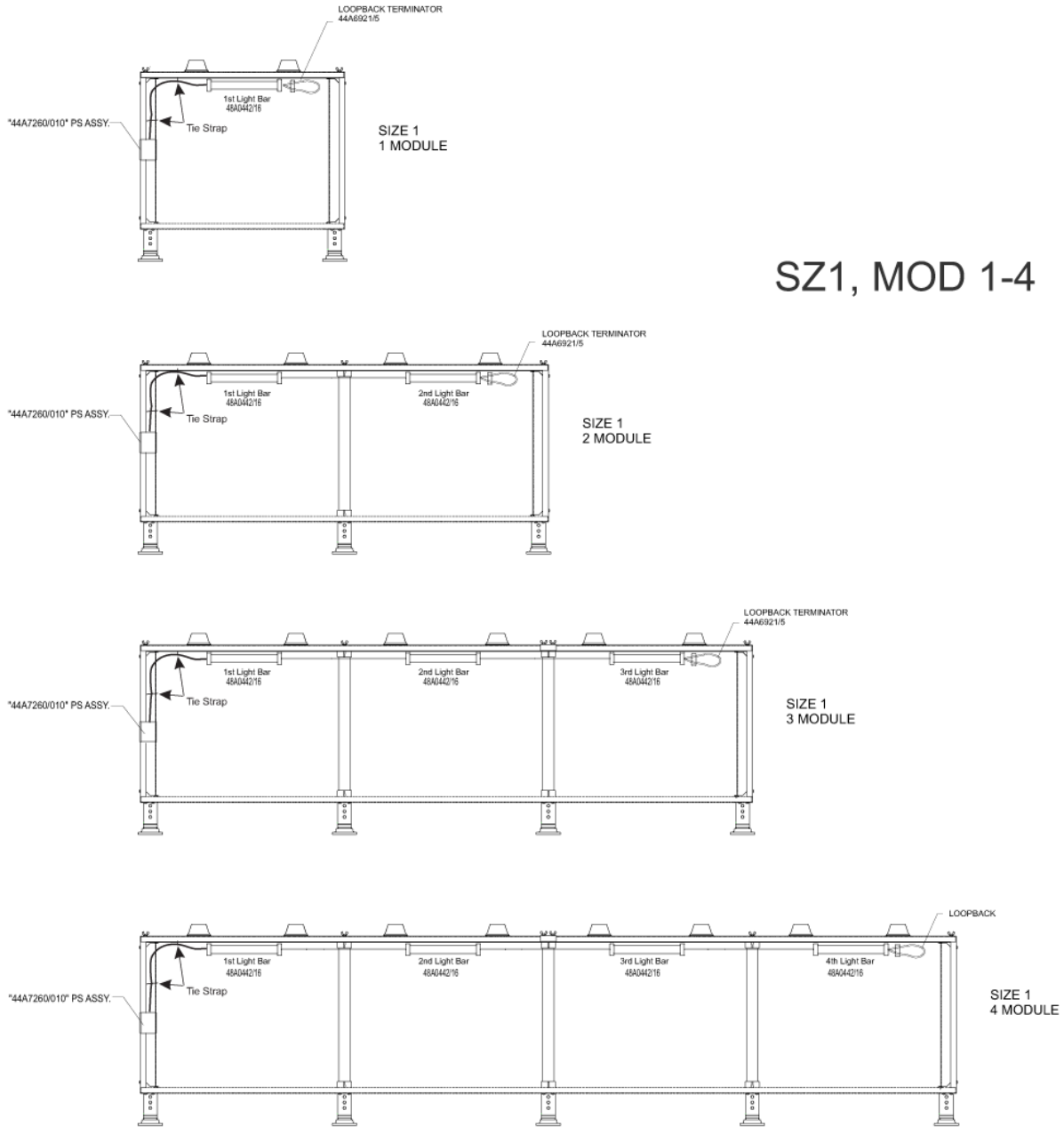


Figure 21: Size 2 Signs

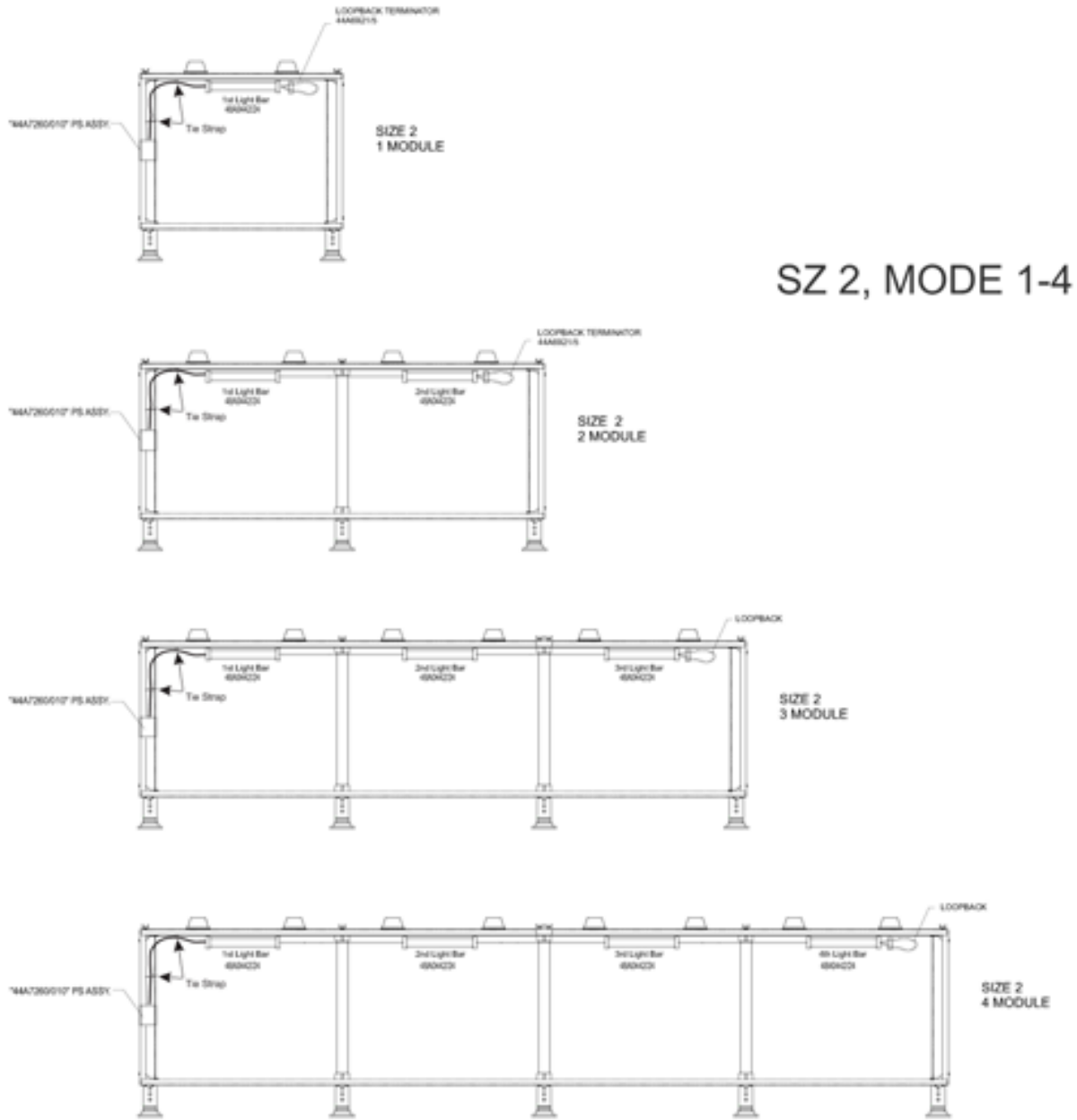
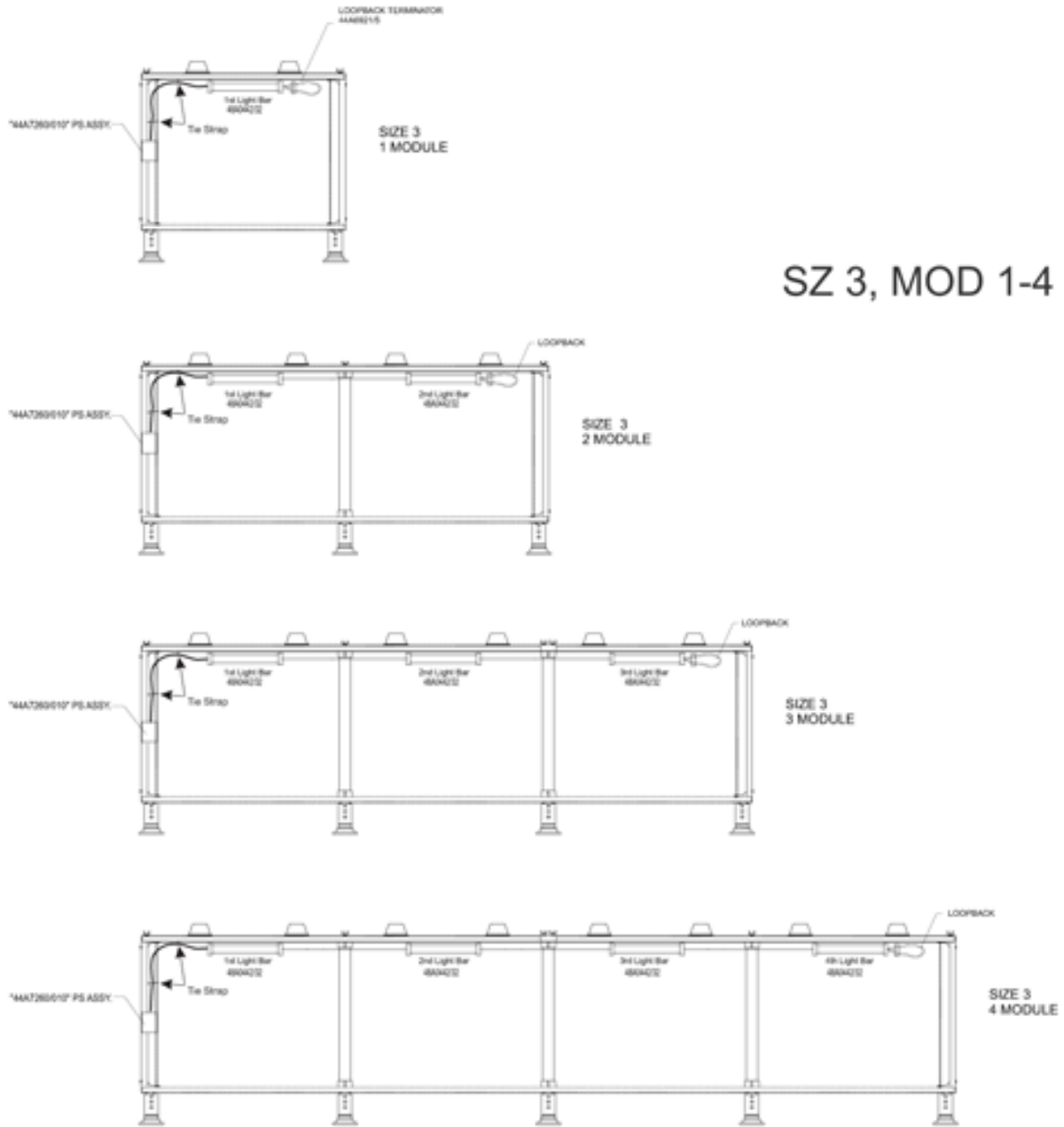
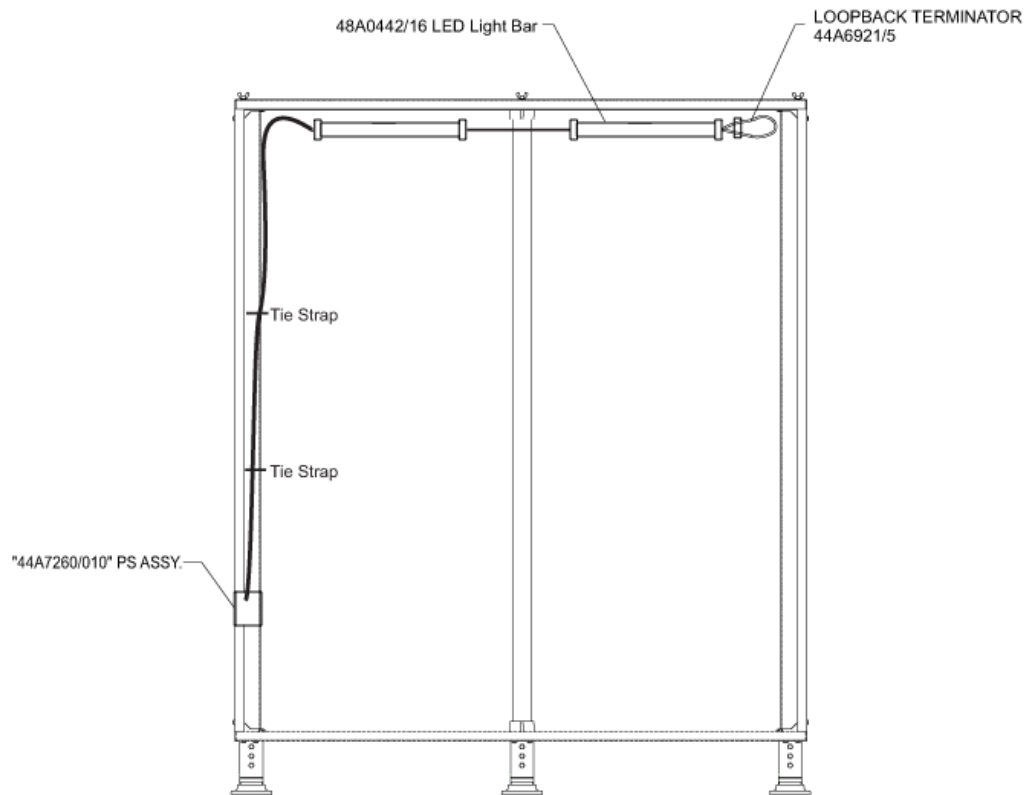


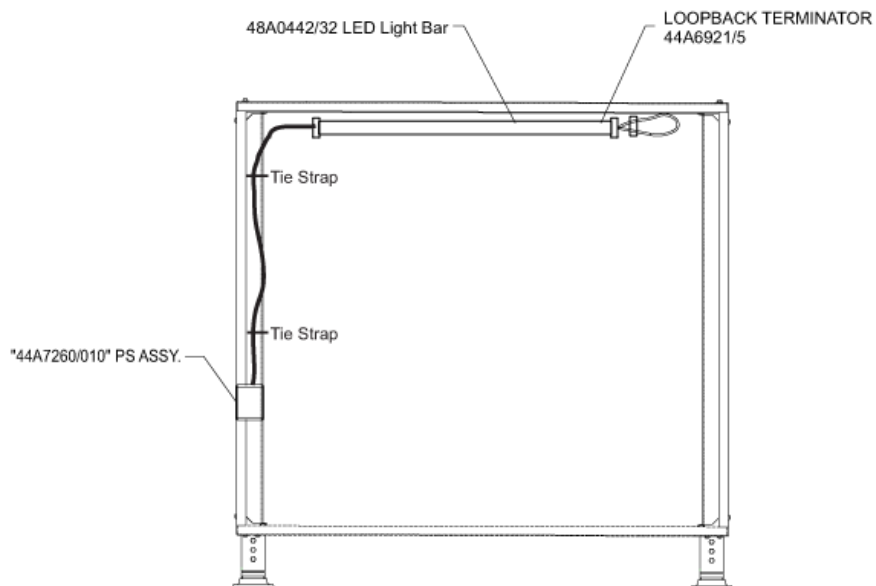
Figure 22: Size 3 Signs



**Figure 23: Size 4 and 5 Signs**



**SZ 4**



**SZ 5**

## 6.1 Install the New Power Supply Assembly

1. Install the new power supply assembly 44A7260-010. See [Figure 20](#) thru [Figure 23](#).
2. Place the Power Supply over the same holes the existing Power Supply used. If holes are not present or in a different location, use Drill Template (Part No. 60A4263) to drill holes to mount the new LED power supply.
3. Place the Power Supply template in place as shown below.

**Figure 24: Using the Template**



4. For mounting the power supply in a Halogen Sign upgrade, drill the 7/32-inch holes. Remove any burring by scoring the hole from inside of the sign with a cross blade screwdriver. This will allow the thermal plate of the power supply to sit flush against the side of the sign for optimum heat transfer.
5. Apply a thin layer of thermal silicone grease to the mating surface of the power supply. Attach the power supply to the sign using 4 #8-32 Pan Head Phillips screws and lock washers.

## 6.2 Sign Load & Transformer Requirements



### Note

Halogen Sign

In [Table 1](#), the number for the Total VA Load imposed on the CCR represents the actual load imposed on the regulator and accounts for the sign power factor and load imposed by the transformer, when the recommended transformer is used.

**Table 1: Sign Load & Transformer Requirements**

Sign Size	Number of Sign Modules	Halogen/ Fluorescent Transformer	Recommended Transformer	Power Factor	Total CCR VA Load
<b>Style 2, 3-Step LED Signs (4.8 - 6.6 A)</b>					
1	1	100/200	65 W	0.83	85
1	2	200/200	100 W	0.83	95
1	3	300/200	100 W	0.88	95
1	4	300/200	100 W	0.91	95
2	1	200/200	65 W	0.88	90

**Table 1: Sign Load & Transformer Requirements (Continued)**

Sign Size	Number of Sign Modules	Halogen/Fluorescent Transformer	Recommended Transformer	Power Factor	Total CCR VA Load
2	2	300/200	100 W	0.88	95
2	3	500/300	100 W	0.91	100
2	4	2×300/300	<b>100 W</b>	0.91	100
3	1	200/200	100 W	0.83	95
3	2	300/200	100 W	0.91	95
3	3	500/300	100 W	0.91	100
3	4	2×300/300	<b>150 W</b> <sup>1</sup>	0.88	115
4	1	300/200	100 W	0.84	95
5	1	200/200	100 W	0.83	95
<b>Style 3, 5-Step LED Signs (2.8 - 6.6 A)</b>					
1	1	200/200	100 W	0.88	75
1	2	300/200	150 W	0.88	95
1	3	500/200	150 W	0.88	95
1	4	500/300	150 W	0.90	100
2	1	300/200	150 W	0.88	90
2	2	500/300	150 W	0.90	95
2	3	500+300/500	<b>150 W</b>	0.83	100
2	4	2×500/500	<b>150 W</b>	0.85	100
3	1	300/200	150 W	0.88	95
3	2	500/300	150 W	0.90	100
3	3	500+300/500	<b>150 W</b> <sup>2</sup>	0.83	100
3	4	2×500/300	<b>200 W</b> <sup>3</sup>	0.85	115
4	1	500/300	150 W	0.88	95
5	1	300/200	150 W	0.83	95
<b>Style 5, Single-Step LED Signs (5.5 A)</b>					
1	1	45/100	<b>65 W</b>	0.84	75
1	2	100/100	65 W	0.84	85
1	3	200/100	100 W	0.88	85
1	4	200/200	100 W	0.88	95
2	1	100/100	65 W	0.92	75
2	2	200/200	100 W	0.89	85
2	3	300/200	100 W	0.90	100
2	4	500/300	100 W	0.90	100
3	1	100/100	65 W	0.84	85
3	2	200/200	100 W	0.88	95
3	3	300/200	100 W	0.92	100

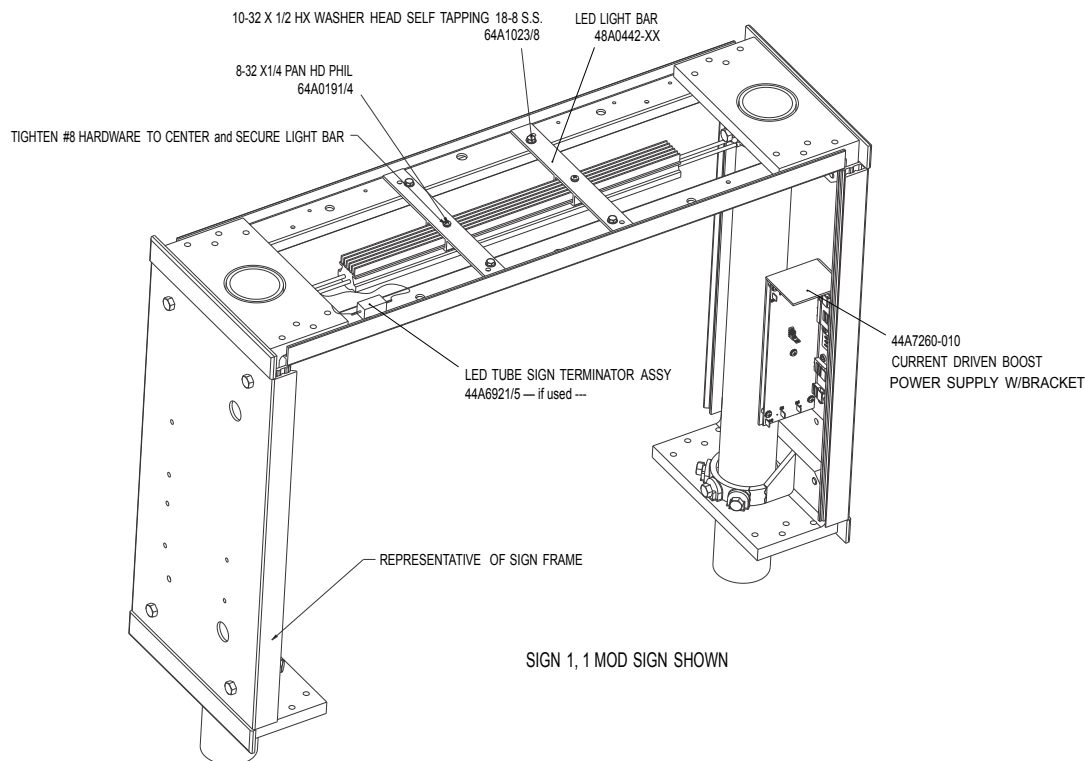


**Table 1: Sign Load & Transformer Requirements (Continued)**

Sign Size	Number of Sign Modules	Halogen/Fluorescent Transformer	Recommended Transformer	Power Factor	Total CCR VA Load
3	4	500/300	100 W	0.92	110
4	1	200/200	65 W	0.83	85
5	1	100/100	65 W	0.92	85

**Notes**

- 1 The Low VA Halogen Style 2 (4.8 A - 6.6A) size 3, 4 module sign uses two 300 W transformers. One of the transformers must be removed or shorted at the secondary.
- 2 The Low VA Halogen Style 3 (2.8 A - 6.6A) size 2 or 3, 3 module sign uses one 500 W transformer and one 300 W transformer. The 500 W transformer may be removed.
- 3 The Low VA Halogen Style 3 (2.8 A - 6.6A) size 2 or 3, 4 module sign uses two 500 W transformers. One of the transformers must be removed or shorted at the secondary.
- 4 The Low VA Halogen Style 5 (5.5A) size 1, 1 module sign uses one 45 W transformer. Replace the 45 W transformer with a 65 W transformer.

**Figure 25: LED Light Bar Assembly into the Sign Frame**


Screw the (4) 8-32 x 3/4-inch Phillips Pan Head screws, split and lock washers into the power supply mounting bracket through the side panel. (same holes and position for a single or a dual power supply).

### 6.3 Install the New LED Light Bar Assemblies

- 1. Install the new LED lamp assemblies with the longer assembly lead facing as shown in [Figure 20](#) thru [Figure 23](#).
- 2. Center the LED assemblies in the module so the bracket holes align with the rail holes.
- 3. Mount the LED Light Assemblies using the four self tapping screws.

### 6.4 Installing the Terminator Assembly

If your kit includes the terminator assembly (resistor), connect the leads to the leads at the end of the last LED bar. See [Figure 27](#). Apply a thin layer of thermal silicone grease to the mating surface and attach the resistor to the top of the top rail using 2 #4-24 Pan Head Phillips Self-Tapping Screws.

Figure 26: Terminating Assembly

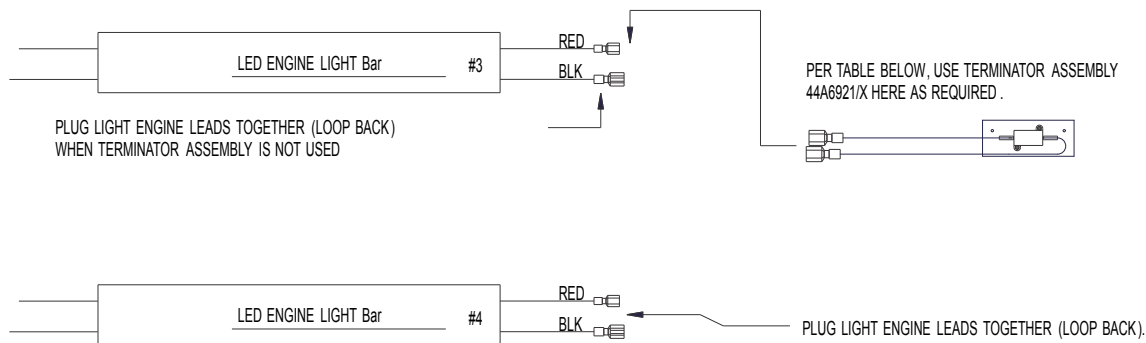


### 6.5 Connect the LED Assemblies to the Power Supply

Connect and install the cabling from the power supply to the LED lamp assemblies by daisy chaining the LED assemblies as shown in [Figure 20](#) thru [Figure 23](#).

The end of the circuit is terminated with a terminator assembly as shown in [Figure 27](#) or signs requiring a loop back by connecting the leads together. See [Figure 20](#) thru [Figure 23](#).

Figure 27: LED Terminator Assembly



LIGHT ENGINE & MODULE TERMINATOR PART #s PER SIGN SIZE					
SIGN SIZE	LIGHT ENGINE	1-MODULE TERMINATOR	2-MODULE TERMINATOR	3-MODULE TERMINATOR	4-MODULE TERMINATOR
1	48A0442/16	44A6921/5	44A6921/5	44A6921/5	LOOP BACK
2	48A0442/24	44A6921/5	44A6921/5	LOOP BACK	LOOP BACK
3	48A0442/32	44A6921/5	LOOP BACK	LOOP BACK	LOOP BACK
4	48A0442/16	44A6921/5	NA	NA	NA
5	48A0442/32	44A6921/5	NA	NA	NA





**Note**

The LED light engines are connected in series, therefore if any LED light engine goes out the entire circuit will be out.

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## Appendix A: SUPPORT

Our experienced engineers are available for support and service at all times, 24 hour/7 days a week. They are part of a dynamic organization making sure the entire ADB SAFEGATE is committed to minimal disturbance for airport operations.

### ADB SAFEGATE Support

#### Live Technical Support - Americas

If at any time you have a question or concern about your product, just contact ADB SAFEGATE's technical service department. Trained in all areas of system issues, troubleshooting, quality control and technical assistance, our highly experienced Technical support specialists are available 24 hours a day, seven days a week to provide assistance over the phone.

ADB SAFEGATE **Americas Technical Service & Support (US & Canada): +1-800-545-4157**

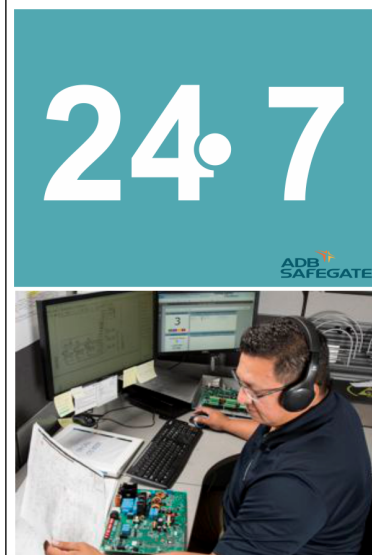
**ADB SAFEGATE Americas Technical Service & Support (International): +1-614-861-1304**

During regular business hours, you can also Chat with a Service Technician. We look forward to working with you!

#### Before You Call

When you have an airfield lighting or system control system problem it is our goal to support airfield maintenance staff as quickly as possible. To support this effort we ask that you have the following information ready before calling.

- The *airport code*
- If not with an airport, then company name (prefer customer id number)
- Contact phone number and email address
- Product with part number preferable or product number
- Have you reviewed the product's manual and troubleshooting guide
- Do you have a *True RMS* meter available (and any other necessary tools)
- Be located with the product ready to troubleshoot



#### Note

For more information, see [www.adbsafegate.com](http://www.adbsafegate.com), or contact ADB SAFEGATE Support via email at [support@adbsafegate.com](mailto:support@adbsafegate.com) or

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Rest of Europe: +46 (0) 40 699 17 40

Americas: +1 614 861 1304. Press 3 for technical service or press 4 for sales support.

China: +86 (10) 8476 0106

### A.1 ADB SAFEGATE Website

The ADB SAFEGATE website, [www.adbsafegate.com](http://www.adbsafegate.com), offers information regarding our airport solutions, products, company, news, links, downloads, references, contacts and more.

## A.2 Recycling

### A.2.1 Local Authority Recycling

The disposal of ADB SAFEGATE products is to be made at an applicable collection point for the recycling of electrical and electronic equipment. The correct disposal of equipment prevents any potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling. The recycling of materials helps to conserve natural resources. For more detailed information about recycling of products, contact your local authority city office.

### A.2.2 ADB SAFEGATE Recycling

ADB SAFEGATE is fully committed to environmentally-conscious manufacturing with strict monitoring of our own processes as well as supplier components and sub-contractor operations. ADB SAFEGATE offers a recycling program for our products to all customers worldwide, whether or not the products were sold within the EU.

ADB SAFEGATE products and/or specific electrical and electronic component parts which are fully removed/separated from any customer equipment and returned will be accepted for our recycling program.

All items returned must be clearly labeled as follows:

- For *ROHS/WEEE* Recycling
- Sender contact information (Name, Business Address, Phone number).
- Main Unit Serial Number.

ADB SAFEGATE will continue to monitor and update according for any future requirements for *EU directives* as and when *EU member states* implement new *regulations* and or *amendments*. It is our aim to maintain our *compliance plan* and assist our customers.

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