

WHELEN[®]

ENGINEERING COMPANY INC.

51 Winthrop Road
Chester, Connecticut 06412-0684
Phone: (860) 526-9504
Internet: www.whelen.com
Sales e-mail: autosale@whelen.com
Customer Service e-mail: custserv@whelen.com

Installation Guide:
Edge[®] LFL Lightbar
(LC Series)

Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that they can operate the system without taking their eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. **PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.**

Warnings to Users

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

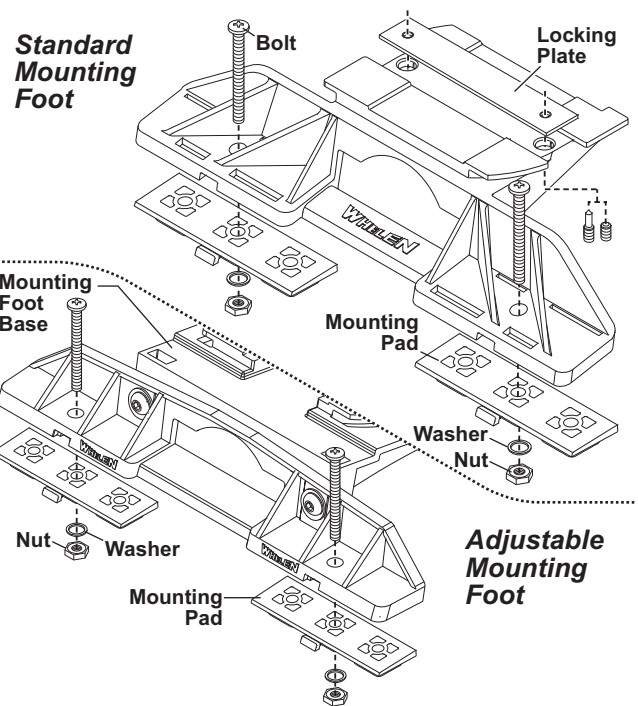
⚠ WARNING: This product can expose you to chemicals including Methylene Chloride which is known to the State of California to cause cancer, and Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.**
- **Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.**
- **Failure to use specified installation parts and/or hardware will void the product warranty.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro[®], clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post (this does not include products that use cigar power cords).**
- **If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **This product contains either strobe light(s), halogen light(s), high-intensity LEDs or a combination of these lights. Do not stare directly into these lights. Momentary blindness and/or eye damage could result.**
- **Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

IMPORTANT! The lightbar should be located a minimum of 16" from any radio antennas!

Strap Mounting:

1. Locate the mounting foot, anchor plate and locking plate included with your lightbar. If not already present, install the locking plate onto the mounting foot. When properly positioned, this plate is centered from side-to-side on the mounting foot.
2. Flip the lightbar upside-down to expose the bottom of the extrusion and place the mounting foot onto the extrusion.
3. Rotate the mounting foot 90° in a counter-clockwise direction. Make sure that the edges of the mounting foot swing into position under the extrusion mounting lip. Install an anchor plate onto the extrusion in the same manner.
4. Repeat this procedure for the remaining mounting foot and anchor plate and return the lightbar to its right side-up position.
5. Position the lightbar onto the vehicle roof in the desired mounting location. One often selected location is directly above the B-pillars. This area is the strongest part of the roof. Refer to your lightbar manual for cable exit location, to be sure that the lightbar is facing the proper direction.
6. Adjust the two mounting feet outwards so that they are as close to the edge of the roof as possible. Both mounting feet must be in full contact with the roof. Be sure that there is no less than 1/2" clearance between roof and lightbar at their closest point. When the mounting feet are in their proper position, lightly tighten the locking plate allen head set screws.
7. Return the lightbar to an upside-down position. Slide each anchor plate outwards until it is fully engaged with its corresponding mounting foot. With the mounting feet and anchor plates in their proper positions firmly tighten all of the set screws (2 or 4 per side). Flip the lightbar right side-up and return it to its mounting position.
8. Open both drivers side doors. In the area directly below the mounting foot, pull the weatherstrip away from the vehicle so the area where the mounting strap will be secured is exposed. Repeat for the other side.
9. Insert the mounting strap through the mounting foot. Be sure that the strap fits flush against the area where it will be secured onto the vehicle.



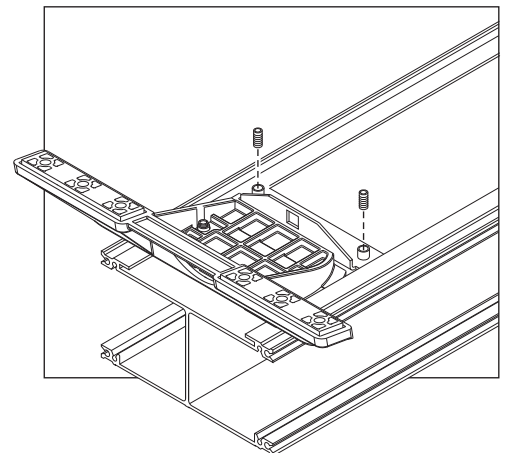
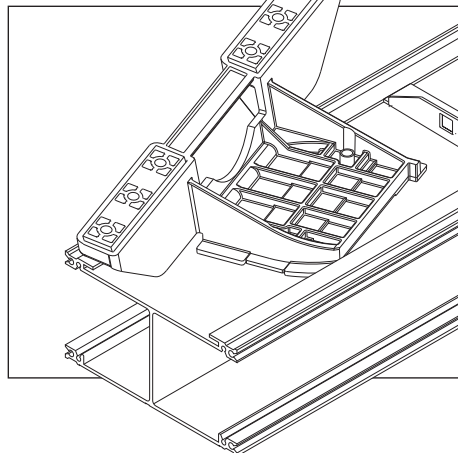
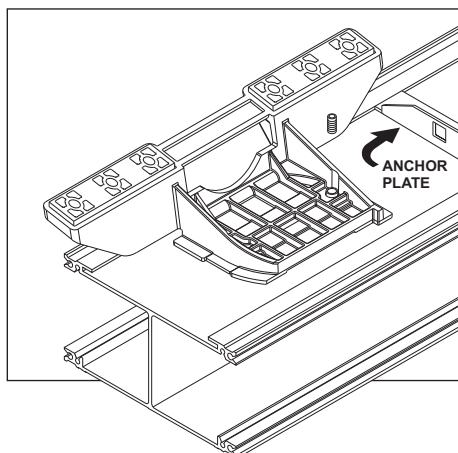
Insert the tension bolt through the mounting strap and anchor plate, into the tinnerman nut. Tighten slightly with a long-shafted, Phillips screwdriver. Repeat procedure for passenger side.

10. If your mounting strap has mounting holes in the end of the strap, use these holes as a template to drill appropriately sized pilot holes through the strap and into the vehicle. Repeat for passenger side of the vehicle.
11. Firmly tighten the tension bolts to secure the lightbar to the vehicle.

Strap Mounting:

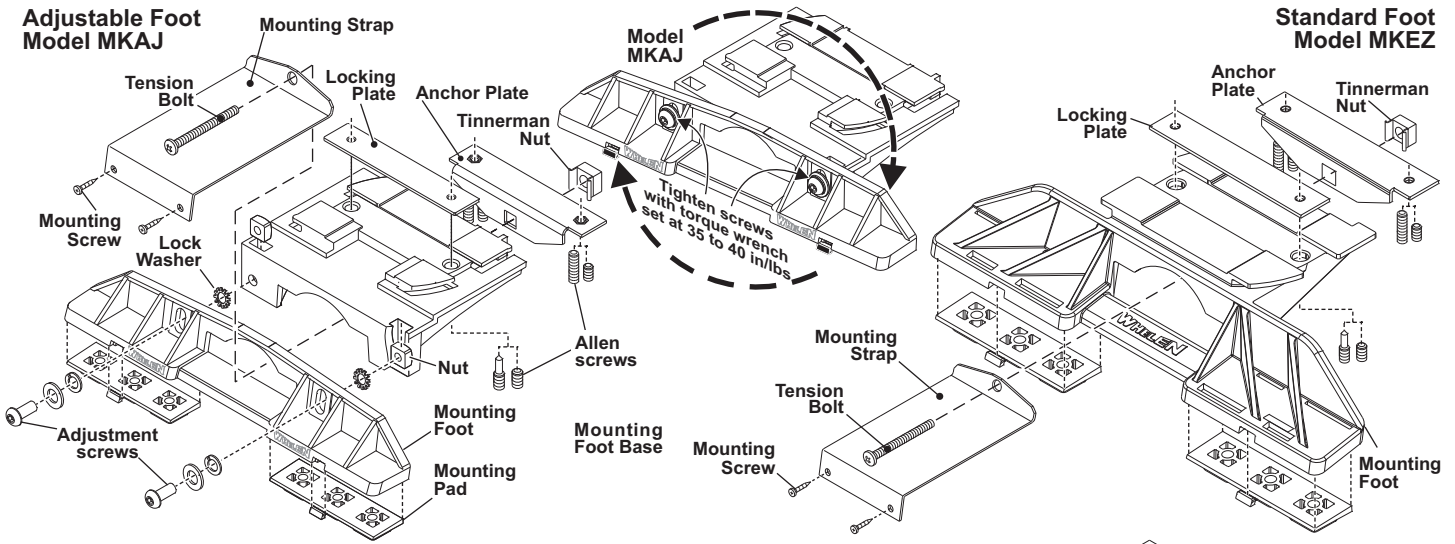
1. Locate the mounting foot, anchor plate and locking plate included with your lightbar. If not already present, install the locking plate onto the mounting foot. When properly positioned, this plate is centered from side-to-side on the mounting foot.
2. Flip the lightbar upside-down to expose the bottom of the extrusion and place the mounting foot onto the extrusion.
3. Rotate the mounting foot 90° in a counter-clockwise direction. Make sure that the edges of the mounting foot swing into position under the extrusion mounting lip. Install an anchor plate onto the extrusion in the same manner.
4. Repeat this procedure for the remaining mounting foot and anchor plate and return the lightbar to its right side-up position.
5. Position the lightbar onto the vehicle roof in the desired mounting location. One often selected location is directly above the B-pillars. This area is the strongest part of the roof. Refer to your lightbar manual for cable exit location, to be sure that the lightbar is facing the proper direction.

6. Adjust the two mounting feet outwards so that they are as close to the edge of the roof as possible. Both mounting feet must be in full contact with the roof. Be sure that there is no less than 1/2" clearance between roof and lightbar at their closest point. When the mounting feet are in their proper position, lightly tighten the locking plate allen head set screws.
7. Return the lightbar to an upside-down position. Slide each anchor plate outwards until it is fully engaged with its corresponding mounting foot. With the mounting feet and anchor plates in their proper positions firmly tighten all of the set screws (2 or 4 per side). Flip the lightbar right side-up and return it to its mounting position.
8. Open both drivers side doors. In the area directly below the mounting foot, pull the weatherstrip away from the vehicle so the area where the mounting strap will be secured is exposed. Repeat for the other side.
9. Insert the mounting strap through the mounting foot. Be sure that the strap fits flush against the area where it will be secured onto the vehicle. Insert the tension bolt through the mounting strap and anchor plate, into the tinnerman nut. Tighten slightly with a long-shafted, Phillips screwdriver. Repeat procedure for passenger side.

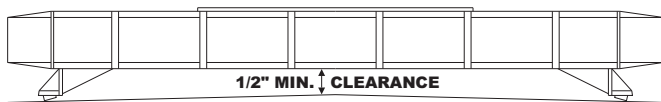
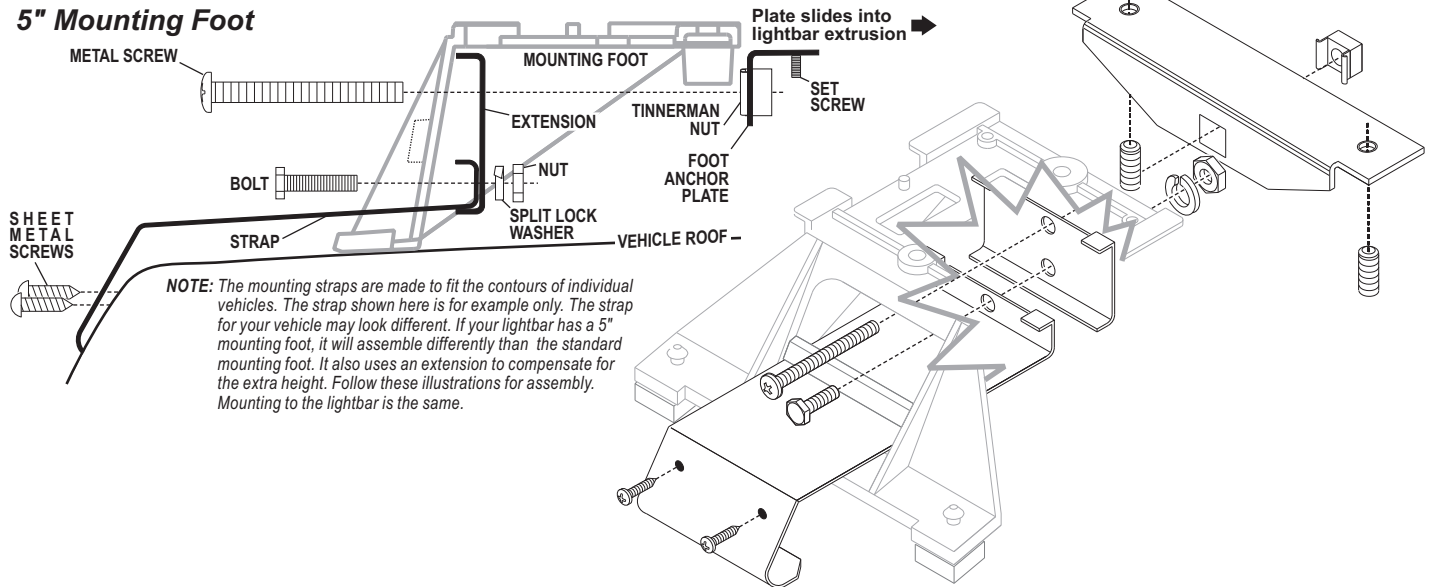


- If your mounting strap has mounting holes in the end of the strap, use these holes as a template to drill appropriately sized pilot holes through the strap and into the vehicle. Repeat for passenger side of the vehicle.
- Firmly tighten the tension bolts to secure the lightbar to the vehicle.

NOTE: Model MKAJ is an adjustable mounting foot. On this model you may loosen the screws on the rear of the foot and adjust the angle of the lightbar. This feature can be used if the angle of the roof is not level with the road. IMPORTANT: To adjust the leveling screws you must use a torque wrench set at 35 to 40 in./lbs.



5" Mounting Foot



IMPORTANT: For strap mounted bars, be sure you have the right sized lightbar for your vehicle. The lightbar should be approximately the same width as the vehicle roof. If too large or small it will not mount properly to the vehicle and may come loose during driving.

NOTE: Unless otherwise specified, the lightbar mounting feet must be sitting as close to the edge of the roof as possible. They must also be in full contact with the roof and not be hanging off the edge.

Routing your Cable:

- To protect the headliner from damage caused by drilling the cable access hole through the vehicle roof, allow a 5" to 7" distance between roof and headliner by lowering the headliner before drilling.

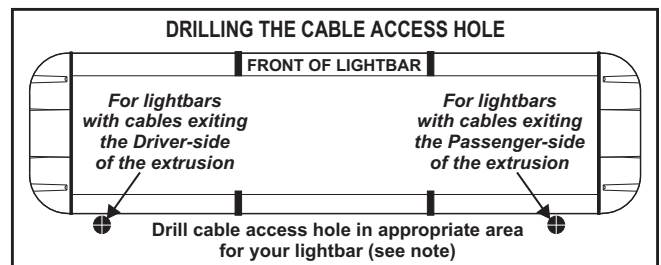
- Using a 1" hole saw, drill the cable access hole.

Note: There may be a roof support member that spans the distance between the driver's and passenger's side. DO NOT DRILL THROUGH THIS MEMBER! Adjust the location until the hole can be drilled without contacting this support member.

- Use a round file to smooth and de-burr the edges of the hole.

- Insert a 1" grommet (user supplied) into the cable access hole.

- Insert the cable(s) through the cable access hole into the vehicle. Use RTV silicone to weatherproof the access hole after the cable(s) are pulled completely into the vehicle.



6. Route the cable(s) down through the B-pillar. The cable(s) must make a 90° turn to enter the B-pillar. Although routing the cable in this manner may be difficult, this has been determined to be the best procedure. It is up to the installation technicians discretion whether to route the cable(s) as recommended or use an alternative route. Pull the full length of the cable(s) out of the hole at the base of the B-pillar (Fig. 1) and route towards your switch panel. Refer to the instructions included with your switches for switch wiring information.

WARNING!The strobe light power supply is a high voltage device. Do not touch or remove the strobe tube assembly while in operation. Wait 10 minutes after disconnecting the unit from its power source before starting work or troubleshooting on power supply or system.

WARNING! All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and FUSED at the battery to carry that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!

ScanLock™ / WHT/BLU or WHT VIO

The ScanLock™ wire changes the flash patterns displayed by the lighthead. To use ScanLock™ you must activate the lighthead you wish to change. WHITE-BLUE is the ScanLock™ wire that changes the Strobe Lights and WHITE-VIOLET is the ScanLock™ wire that changes the LEDs.

To cycle forward through all patterns: Activate the lighthead you want to change, then apply +12 volts to the appropriate ScanLock™ wire for less than 1 second and release. This will change the pattern. Repeat to go to next pattern.

To choose a pattern: While cycling through the patterns, when you find the pattern you want let it run for more than 5 seconds and it will lock in and become the default pattern.

To reset to the factory default pattern: Turn off the option you want to reset, apply +12 volts to the ScanLock™ wire then turn the option back on.

Available Scan-Lock™ Patterns:

Strobe Scan-Lock™ Patterns

- CometFlash® 150
- TripleFlash™ 185
- DoubleFlash 220
- SingleFlash 480
- ActionFlash™
- ModuFlash™
- MicroBurst™ 2
- MicroBurst™ 3
- LongBurst™
- ActionScan™

Front/Rear LED Scan-Lock™ Patterns

- | | | |
|-------------------------|----------------|----------------------------|
| Front-Rear LEDs: | RapidRate™ 50 | ModuFlash™ ZigZag 1 |
| CometFlash® 60 | RapidRate™ 200 | SignalAlert™ 75 ZigZag 2 |
| DoubleFlash 100 | SimulBlast | Signal Alert™ 60 Steady On |
| SingleFlash 240 | ZigZag Blast | |
| ActionFlash™ | Random Blast | |

Low Power / VIOLET:

When you apply +12VDC, to the VIOLET wire it will initiate Low Power operation of all strobes. Turn the lightbar off and then back on to restart in high power.

Control Cable: Extend the control cable to your switch panel and make the appropriate connections, using the information provided. The control cable connects to your control head or switch box and is fused there. Typical fusing is 5 Amps. Applying +12 volts to a control cable wire activates its function.

- BLUE** - This wire activates the *Rear Corner Strobes*.
 - GREEN** - This wire activates the *Front Corner Strobes*.
 - BLUE-WHITE** - This wire activates the *Rear Inboard Strobes*.
 - GREEN-WHITE** - This wire activates the *Front Inboard Strobes*.
 - BLUE-BLACK** - This wire activates the *Left Traffic Advisor™*.
 - GREEN-BLACK** - This wire activates the *Right Traffic Advisor*.
 - WHITE** - This wire activates the *Driver-Side Alley Light (steady)*.
 - YELLOW** - This wire activates the *Passenger-Side Alley Light (steady)*.
 - WHITE-BLACK** - This wire activates the *Take-Down Lights (steady)*.
 - WHITE-BROWN** - This wire activates the *Rear LEDs (1 - 6)*.
 - WHITE-RED** - This wire activates the *Front LEDs (7 - 12)*.
 - WHITE-ORANGE** - *Auxiliary*.
 - WHITE-YELLOW** - This wire activates the *Flashing Take-Down Lights*
 - WHITE-GREEN** - This wire activates the *Flashing Alley Lights*.
 - WHITE-BLUE** - This wire activates the *Strobe Scan-Lock™*.
 - WHITE-VIOLET** - This wire activates the *LED Scan-Lock™*.
 - VIOLET** - When applied to +12VDC, this will initiate low power operation of all strobes. Lightbar must be turned off, then on again to restart in high power.
 - NONE** - This is the RFI shield drain wire and is connected to ground.
- NOTE:** Activating wires X & Y simultaneously will switch the strobe pattern from CometFlash® to LongBurst™.

Power Cable:

- RED** - Provides power for all strobe lamps. Connect to POSITIVE battery terminal (12 VDC) and fuse @ 40 amps AT THE BATTERY.
- BLACK** - Provides ground for all strobe lamps. Connect to chassis ground.
- NONE** - RFI shield drain. Connect to chassis ground.

