



WHELEN AEROSPACE TECHNOLOGIES

Phone: 1-772-276-6615

gse@flywat.com

51 Winthrop Road

Chester, CT 06412

Installation Guide: Incursion Mini Lightbar

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

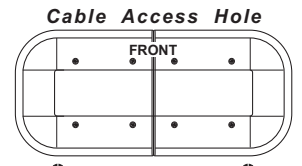
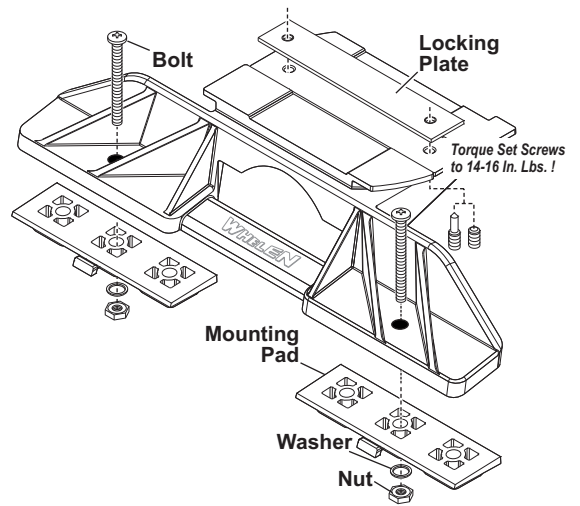
This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained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

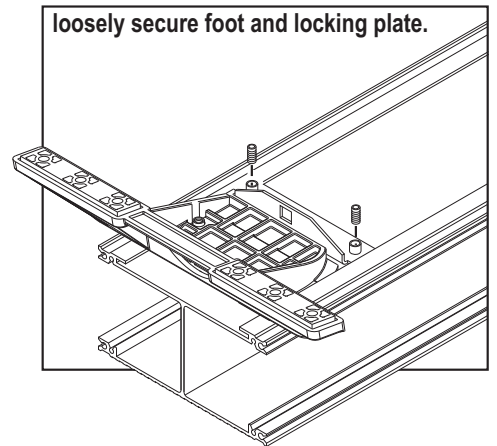
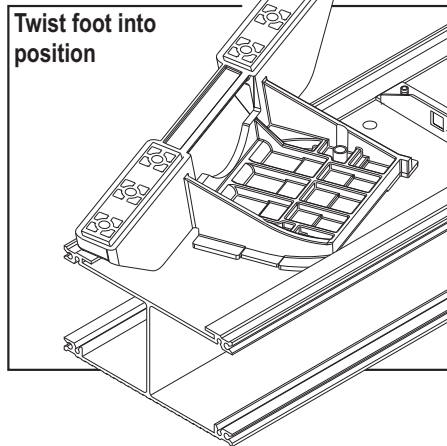
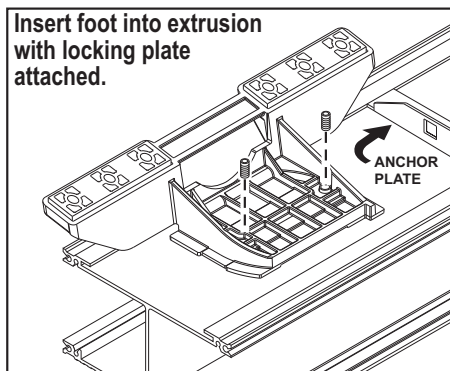
- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.**
- **Any holes, either 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 a minimum of 16" from any radio antennas!
Permanent Mounting:

1. Locate the mounting foot and mounting plate included with your lightbar. If not already present, install the 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° counter-clockwise. Make sure that the edges of the mounting foot swing into position under the extrusion mounting lip.
4. Repeat this procedure for the remaining mounting foot 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 your lightbars 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. Make sure that both mounting feet are in full contact with the roof. Be sure that there is no less than 1/2" clearance between the roof and the lightbar at their closest point. When the mounting feet are in their proper position, lightly tighten the mounting foot allen head set screws.
7. Turn the lightbar upside down and tighten all of the set screws from step 6 (2 or 4 per side) to 14-16 In. Lbs..
8. Note that on the adjustable foot, use the hole in the pad as a guide to drill the two holes into the mounting foot at the locations shown.
9. Place the lightbar in its final mounting position on the vehicle, mark the mounting hole locations off onto the mounting surface, remove the lightbar and drill the mounting holes.
10. Place the lightbar back onto the vehicle lined up with the mounting holes and secure the mounting feet to the vehicle using the supplied hardware.



Drill the cable access hole in the appropriate area for your lightbar.



Lightbar Cable:

The standard lightbar uses an 11 conductor cable for LED's and Halogens as well as power and function. Extend the cable towards your switch panel and follow the switch panel instructions for wiring connections.

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!**

WHITE/VIOLET: Scan-Lock™

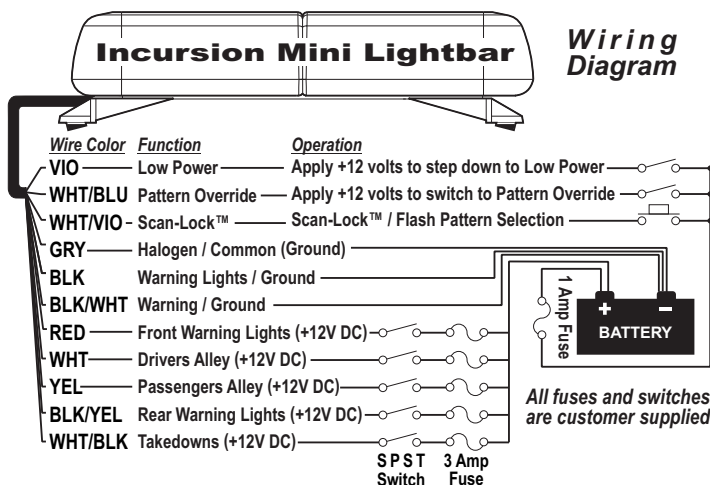
LED's must be on for Scan-Lock™ to work.

TO CHANGE PATTERNS: To cycle forward to the next available pattern: Apply +12 volts to the WHT/VIO wire for less than 1 second and release. To cycle back to the previous pattern: Apply +12 volts to the WHT/VIO wire for more than 1 second and release.

TO CHANGE THE DEFAULT PATTERN: When the desired pattern is active, allow it to run for over 5 seconds. The lightbar will now display this pattern when activated.

TO RESTORE THE FACTORY DEFAULT PATTERN: With power to the lighthoods off, apply +12 volts to the WHT/VIO wire. While still applying +12 volts to the WHT/VIO wire, turn power to the lighthoods back on. The factory default pattern should now be displayed.

A Normally Open momentary switch can be used to control Scan-Lock™ operation. Cigar cord models have a switch on the cigar plug.



IMPORTANT WARNING!

CAUTION! DO NOT LOOK DIRECTLY AT THESE LED'S WHILE THEY ARE ON. MOMENTARY BLINDNESS AND/OR EYE DAMAGE COULD RESULT!

Violet / Low Power:

The type of switch used depends on how you wish Hi/Lo to function:

Latching Mode: Apply positive voltage to the VIOLET wire for less than 1 sec., the lightbar is "latched" into low power. The lightbar must be turned off and then back on to restore normal operation. (A momentary switch is preferred)

Level Mode: Applying positive voltage to the VIOLET wire for more than 1 sec. holds the lightbar in low power mode until voltage is removed. (A toggle switch is preferred)

WHITE/BLUE: Pattern Override

Applying +12 volts to the WHT/BLU wire while lighthoods are activated will change the flash pattern to whichever flash pattern that *pattern override* is pre-programmed for. To program *pattern override*, activate the lightbar then activate *pattern override* by applying +12 volts to the WHT/BLU wire. Now you may select a flash pattern using the Scan-Lock™ procedure.

IMPORTANT! Before returning this vehicle to active service, visually confirm the proper operation of this product, as well as all vehicle components/equipment.

IMPORTANT! It is the responsibility of the installation technician to make sure that the installation and operation of this product will not interfere with or compromise the operation or efficiency of any vehicle equipment!

Available Flash Patterns:	
1. ActionScan™ - Alt	16. SingleFlash 120 Alt/Sync *
2. SignalAlert™ 75 - Alt/Sync	17. SingleFlash 120 Frnt/Rear *
3. SignalAlert™ 75 - Frnt/Rear	18. SingleFlash 300 Alt/Sync
4. CometFlash® 75 Alt/Sync	19. SingleFlash 300 Frnt/Rear
5. CometFlash® 75 Frnt/Rear	20. DoubleFlash 120 Alt/Sync
6. DoubleFlash 75 Alt/Sync	21. DoubleFlash 120 Frnt/Rear
7. DoubleFlash 75 Frnt/Rear	22. ActionFlash™ 50 Alt/Sync
8. SingleFlash 75 Alt/Sync	23. ActionFlash™ 50 Frnt/Rear
9. SingleFlash 75 Frnt/Rear	24. ActionFlash™ 150 Alt/Sync
10. LongBurst™ 75 Alt/Sync	25. ActionFlash™ 150 Frnt/Rear
11. LongBurst™ 75 Frnt/Rear	26. PingPong™ 75 Alt/Sync
12. SingleFlash 60 Alt/Sync *	27. PingPong™ 75 Frnt/Rear
13. SingleFlash 60 Frnt/Rear *	28. FlimFlam Alt/Sync
14. SingleFlash 90 Alt/Sync *	29. FlimFlam Frnt/Rear
15. SingleFlash 90 Frnt/Rear *	30. ModuFlash™ Alt/Sync
	31. ModuFlash™ Frnt/Rear
	32. SignalAlert™ 75 In/Out
	33. SignalAlert™ 75 Checker
	34. SignalAlert™ 75 4 Cycle
	35. SignalAlert™ 75 Alt
	36. CometFlash® 75 In/Out
	37. CometFlash® 75 Checker
	38. CometFlash® 75 4 Cycle
	39. CometFlash® 75 Alt
	40. DoubleFlash 75 In/Out
	41. DoubleFlash 75 Checker
	42. DoubleFlash 75 4 Cycle
	43. DoubleFlash 75 Alt
	44. SingleFlash 75 In/Out
	45. SingleFlash 75 Checker
	46. SingleFlash 75 4 Cycle
	47. SingleFlash 75 Alt
	48. LongBurst™ 75 In/Out
	49. LongBurst™ 75 Checker
	50. LongBurst™ 75 4 Cycle
	51. LongBurst™ 75 Alt
	52. SingleFlash 60 In/Out *
	53. SingleFlash 60 Checker *
	54. SingleFlash 60 4 Cycle *
	55. SingleFlash 60 Alt *
	56. SingleFlash 90 In/Out *
	57. SingleFlash 90 Checker *
	58. SingleFlash 90 4 Cycle *
	59. SingleFlash 90 Alt *
	60. SingleFlash 120 In/Out *
	61. SingleFlash 120 Checker *
	62. SingleFlash 120 Checker *
	63. SingleFlash 120 4 Cycle *
	64. SingleFlash 120 Alt *
	65. SingleFlash 300 Checker
	66. SingleFlash 300 4 Cycle
	67. SingleFlash 300 Alt
	68. DoubleFlash 120 In/Out
	69. DoubleFlash 120 Checker
	70. DoubleFlash 120 4 Cycle
	71. DoubleFlash 120 Alt
	72. ActionFlash™ 50 In/Out
	73. ActionFlash™ 50 Checker
	74. ActionFlash™ 50 4 Cycle
	75. ActionFlash™ 50 Alt
	76. ActionFlash™ 150 In/Out
	77. ActionFlash™ 150 Checker
	78. ActionFlash™ 150 4 Cycle
	79. ActionFlash™ 150 Alt

Alt = Alternating Frnt/Rear = Front to Rear Alt/Sync = Alternating/Synchronized In/Out = ? Checker = Checkerboard Pattern 4 Cycle = Rotates: Alternating, Front-Rear, In-Out and Checkerboard
* = California Title XIII Compliant

QTY	ITEM	PART NUMBER	DESCRIPTION
*		01-0690895-00	INCURSION MINI GSE
1	1	11-36A916-014	EXTRUSION, 14.875 W/HOLES
1	2	02-036A914191	BASE, W/SEAL WITH HOLE (GSE)
1	3	02-036A914190	BASE, W/SEAL WITHOUT HOLE (GSE)
1	4	21-11245004-1	GROMMET, SPECIAL TO BE MOLDED 1.562" RUBBER
2	5	07-286040-000	BRACKET, MTG LTHD SHORT END JUSTICE LIGHTBAR
12	6	21-17060704-3	GROMMET, ITW FASTEX PLASTI
6	7	15-101416-080	SCREW, 10 X 1/2 PPHSMS 410 SS
1	8	38-0443429-30	DIVIDER, BRIDGE CLEAR JUSTICE SERIES
1	9	38-0464988-00	SEAL, DIVIDER JUSTICE SERIES
1	10	46-0742901-00	ASS'Y, INPUT CABLE 11/C COMP 17' EDGE 9M SERIES
1	11	07-243693-000	BRACKET, STRAIN RELIEF, JUSTICE MINI
3	12	15-045410-060	SCREW, 4-20 X 3/8" PPH THDFORM PLASTI-LOK, BLK
1	13	26-0215001-06	TY-WRAP 6" BLACK
1	14	02-016A934-00	ASS'Y, PCB I/O BD WIRED, MINI JUSTICE
1	15	39-0412023-04	HOUSING, 12 POS SCKT F/H COMM MATE-N-LOK
2	16	46-076A959-00	ASS'Y, HARNESS INTERNAL, MINI JUSTICE BAR
4	17	01-026B704-16	SUB ASS'Y, 6 LED CORNER AMBER JUSTICE SERIES
4	18	01-026B568-10	SUB ASS'Y, ECONO 3 LED AMBER W/O LENS HINGE JUSTICE
4	19	68-1984766-30	LENS, CLEAR OPTIC CONICAL 3 JUSTICE SERIES
2	20	68-1984949-30	DOMES, CLEAR OPTIC END SHORT JUSTICE SERIES
8	21	15-101416-288	SCREW, 10 X 1 3/4 PPHSMS 410 SS TYPE A, W/ NYSEAL
1	22	10-0322935-00	LABEL, "FRONT" LIGHTBAR ASSYS
1	23	10-0523364-01	LABEL, M/N S/N INSIDE ID INCURSION SERIES GSE
1	24	01-0483969007	KIT, 7 MOUNTING, RTTNL.INSTALL
12	25	14-040285-063	SCREW, 4-40 X 3/8 TORX PH TRILOBULAR 410 SS, BLK OXIDE

11/C CABLE

RED +12VDC FRONT WARNING
 GRAY GROUND HALOGEN
 WHT/BLU +12VDC PATTERN OVERRIDE
 WHITE +12VDC DRIVER'S ALLEY
 YELLOW +12VDC PASSENGER'S ALLEY
 WHT/BLK +12VDC TAKE DOWN LIGHTS
 WHT/VIO +12VDC SCANLOCK
 VIOLET +12VDC LOW POWER
 BLACK GROUND WARNING
 BLACK/WHT GROUND WARNING
 BLACK/YELLOW +12VDC REAR WARNING

