

WHELEN[®]

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Installation Manual 97 Series LED Lighthead

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.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **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 any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this product is mounted with 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 owners 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.**
- **If this product uses a remote device to activate or control this product, make sure that this control is located in an area that allows both the vehicle and the control 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!**

Typical Mounting Style:

1. Using the dimensions from the template, mark off and drill the two 5/16 inch diameter vent tube holes and the 1 inch center wire hole into the mounting surface. **NOTE:** Make sure lighthouse will not interfere with existing equipment and be aware of any items on the opposite side of the mounting surface.
2. Insert the two vent tubes extending from the rear of the lighthouse into their holes making sure that the lighthouse is oriented as shown (*lens mounting screw must be on the bottom*). Using a scribe or similar tool, mark off the 4 mounting holes.
3. Using a drill bit sized for a #10 sheet metal screw (*and the thickness of the mounting surface*), drill the four mounting holes. Install a grommet (*customer supplied*) into the 1 inch wire hole.
4. Using appropriately sized wires (*See Recommended Wire Size*), run the lighthouse wires to their connections. (*See Wiring*) Fuse the +12VDC connections at 3 Amps and test the operation of the lighthouse before securing it to the vehicle.
5. Position the lighthouse components onto the mounting surface and secure to the vehicle using four #10 x 1" sheet metal screws. Secure the lens with the supplied #10 x 5/8" lens screw.

NOTICE: This product draws significantly less current than a standard incandescent automotive bulb. If your flasher does not operate properly, it may be necessary to replace your existing flasher module with a Whelen 3TERM flasher module. Contact your sales representative for specific vehicle application.

Default Patterns:

BRAKE / TAIL / TURN

LED Assembly - 360 LED's
Input Voltage - 12.8 VDC $\pm 20\%$
Input Current - Tail - 0.2 AMPS
Brake - 1.6 AMPS
Default Flash Pattern - Signal Alert™ Brake

LED Assembly / 96 LED's
Input Voltage - 12.8 VDC $\pm 20\%$
Input Current - Tail - 0.08 AMPS
Brake - 0.5 AMPS
Default Flash Pattern - Signal Alert™ Brake

WIDE ANGLE

Input Voltage - 12.8 VDC $\pm 20\%$
Input Current - 1.4 AMPS
Default Pattern - Signal Alert™

ARROW

Input Voltage - 12.8 VDC $\pm 20\%$
Input Current - 1 AMP
Default Flash Pattern - Signal Alert™ Arrow 150

FLASHER

Input Voltage - 12.8 VDC $\pm 20\%$
Input Current - 1.25 AMPS
Default Pattern - Signal Alert™

STEADY

Input Voltage - 12.8 VDC $\pm 20\%$
Input Current - 1.80 AMPS
Default Pattern - Steady

PATTERN SELECTION PROCEDURE:

IMPORTANT: Pattern selection requires the LED to be turned on.
DO NOT LOOK DIRECTLY AT LEDs WHILE UNIT IS IN OPERATION.

NOTE: Although the location of the pins varies for each LED board, this procedure is applicable to all LED boards that offer selectable patterns. The location of these pins will vary between models, but they will always be on the LED side of the circuit board. Electrical components will not be visible on encapsulated LED boards.

1. Remove the lens and Locate the Pattern Activation Pins for your model LED. (*Section of typical L.E.D. board below shows pins.*)

2. Turn the LED flasher on.

3A. TO CYCLE FORWARD THROUGH ALL

PATTERNS: Use a penny (or any electrical conducting item) to contact both Pattern Activation Pins for less than 1 second and release. Repeat to go to the next pattern.

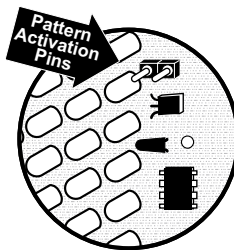
3B. TO CHOOSE A PATTERN:

While cycling through the patterns, allow a pattern to run for more than five seconds, this will become the default pattern until it is changed

3C. TO CYCLE BACKWARDS THROUGH ALL PATTERNS:

Hold penny against Activation Pins for more than 1 second and release.

4. When you've chosen a pattern, turn off power and re-mount lens.



AVAILABLE FLASH PATTERNS:

RAPIDFIRE™ 375 - 375 Single Flashes Per Minute

RAPIDFIRE™ 150 - 150 Single Flashes Per Minute

RAPIDFIRE™ 75 - 75 Single Flashes Per Minute

RAPIDFIRE™ 30 - 30 Single Flashes Per Minute

DOUBLE FLASH 150 - 150 Double Flashes Per Minute

DOUBLE FLASH 75 - 75 Double Flashes Per Minute

COMET FLASH® - 75 Comet Flashes Per Minute

ACTION FLASH™ - 2 Comet Flash / 4 X 150 SFP / 2 Comet

MODU FLASH™ - 75 to 360 Single Flashes Per Minute

SIGNAL ALERT™ 150 - 150 Flashes Per Minute

SIGNAL ALERT™ 75 - 75 Flashes Per Minute

SCAN - 2 Cycles of Patterns 3 thru 12

SIGNAL ALERT™ BRAKE - 4 Flashes Cycle For 200 MS
Followed by Steady Burn

STANDARD BRAKE - Steady Burn

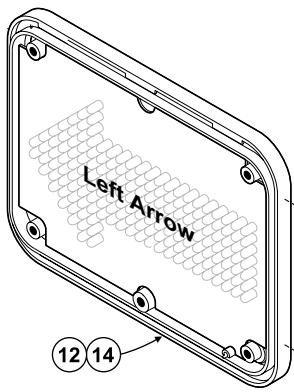
ARROW L.E.D. ONLY:

SIGNAL ALERT™ ARROW 375 - 375 Flashes Per Minute

SIGNAL ALERT™ ARROW 150 - 150 Flashes Per Minute

SEQUENCE ARROW 150 - 150 Flashes Per Minute

SEQUENCE ARROW 60 - 60 Flashes Per Minute



12 14

EXAMPLE OF PART NUMBER:
01-0683430-5 RR



STYLE

- 1 = WIDE ANGLE
- 2 = BRAKE-TAIL-TURN / MIN
- 3 = ARROW
- 5 = FLASHER
- B = BRAKE-TAIL-TURN / MAX
- 6 = FLOOD

COLOR OF L.E.D.

- A = AMBER
- B = BLUE
- G = GREEN
- R = RED
- Q = LEFT RED ARROW
- S = RED RIGHT ARROW
- T = LEFT AMBER ARROW
- U = RIGHT AMBER ARROW
- W = WHITE

LENS COLOR

- A = AMBER
- B = BLUE
- C = CLEAR
- G = GREEN
- R = RED

ARROW / WIDE ANGLE / FLASHER

| Wire Color | Function |
|--|----------|
| Colored <i>This wire color will be whatever the color of its LED is, when light is switched on.</i> | +12 VDC |
| Black | Ground |

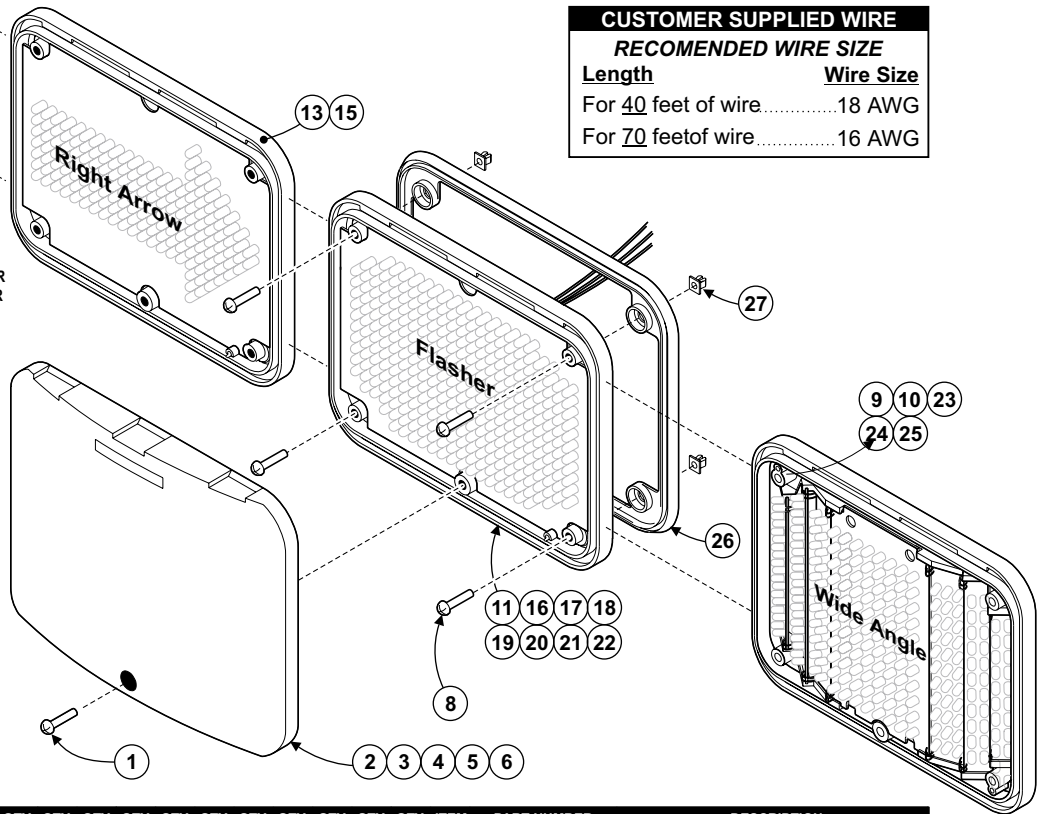
BRAKE / TAIL / TURN

| Wire Color | Function |
|------------|-----------------------|
| Yellow | Stop, Turn / + 12 VDC |
| Brown | Taillight / +12 VDC |
| White | To Chassis Ground |

CUSTOMER SUPPLIED WIRE

RECOMENDED WIRE SIZE

| Length | Wire Size |
|--------------------------|-----------|
| For 40 feet of wire..... | 18 AWG |
| For 70 feet of wire..... | 16 AWG |



| QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | QTY. | ITEM | PART NUMBER | DESCRIPTION | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------------|---|---------------------------------------|
| | | | | | | | | | | | | | | | | | | | | 01-06834301AA | LIGHTHEAD MODEL 97 LED WIDE ANGLE - AMBER | |
| | | | | | | | | | | | | | | | | | | | | 01-06834301RR | LIGHTHEAD MODEL 97 LED WIDE ANGLE - RED | |
| | | | | | | | | | | | | | | | | | | | | 01-06834302RR | LIGHTHEAD MODEL 97 LED BRAKE/TAI/TURN (MIN) | |
| | | | | | | | | | | | | | | | | | | | | 01-06834303RQ | LIGHTHEAD MODEL 97 LED LEFT RED ARROW | |
| | | | | | | | | | | | | | | | | | | | | 01-06834303RS | LIGHTHEAD MODEL 97 LED RIGHT RED ARROW | |
| | | | | | | | | | | | | | | | | | | | | 01-06834303AT | LIGHTHEAD MODEL 97 LEFT AMBER ARROW | |
| | | | | | | | | | | | | | | | | | | | | 01-06834303AU | LIGHTHEAD MODEL 97 LED RIGHT AMBER ARROW | |
| | | | | | | | | | | | | | | | | | | | | 01-06834305AA | LIGHTHEAD MODEL 97 LED FLASHER - AMBER | |
| | | | | | | | | | | | | | | | | | | | | 01-06834305BB | LIGHTHEAD MODEL 97 LED FLASHER - BLUE | |
| | | | | | | | | | | | | | | | | | | | | 01-06834305GG | LIGHTHEAD MODEL 97 LED FLASHER - GREEN | |
| | | | | | | | | | | | | | | | | | | | | 01-06834305RR | LIGHTHEAD MODEL 97 LED FLASHER - RED | |
| | | | | | | | | | | | | | | | | | | | | 01-06834305CW | LIGHTHEAD MODEL 97 LED FLASHER - WHITE | |
| | | | | | | | | | | | | | | | | | | | | 01-0683430BRR | LIGHTHEAD MODEL 97 LED BRAKE/TAI/TURN (MAX) | |
| | | | | | | | | | | | | | | | | | | | | 01-06834306CW | LIGHTHEAD MODEL 97 LED FLOOD - WHITE | |
| | | | | | | | | | | | | | | | | | | | | 01-06834301BB | LIGHTHEAD MODEL 97 LED WIDE ANGLE - BLUE | |
| | | | | | | | | | | | | | | | | | | | | 01-06834301CW | LIGHTHEAD MODEL 97 LED WIDE ANGLE - WHITE | |
| | | | | | | | | | | | | | | | | | | | | 01-06834301GG | LIGHTHEAD MODEL 97 LED WIDE ANGLE - GREEN | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | SCREW, #10 X 5/8" SMS | | |
| - | - | - | - | - | - | - | - | - | - | 1 | 1 | 1 | - | - | - | - | - | - | 1 | 2 | 68-3183423-10 | LENS, AMBER |
| - | - | 1 | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 3 | 68-3183423-20 | LENS, BLUE |
| - | 1 | - | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 68-3183423-30 | LENS, CLEAR |
| 1 | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 5 | 68-3183423-40 | LENS, GREEN |
| - | - | - | - | 1 | - | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | - | - | - | 6 | 68-3183423-50 | LENS, RED |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 8 | SCREW, #10 X 1" PPHSMS | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 9 | 01-0283429-A0 | SUB ASSY, 97 LED WIDE ANGLE - AMBER |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 10 | 01-0283429-R0 | SUB ASSY, 97 LED WIDE ANGLE - RED |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 11 | 01-0283434-R1 | SUB ASSY, 97 LED BRAKE/TAI/TURN (MIN) |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 12 | 01-0283436-R0 | SUB ASSY, 97 LED LEFT ARROW - RED |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 13 | 01-0283436-R1 | SUB ASSY, 97 LED RIGHT ARROW - RED |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 14 | 01-0283436-A0 | SUB ASSY, 97 LED LEFT ARROW - AMBER |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 15 | 01-0283436-A1 | SUB ASSY, 97 LED RIGHT ARROW - AMBER |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 16 | 01-0283434-A0 | SUB ASSY, 97 LED FLASHER - AMBER |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 17 | 01-0283434-B0 | SUB ASSY, 97 LED FLASHER - BLUE |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 18 | 01-0283434-G0 | SUB ASSY, 97 LED FLASHER - GREEN |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 19 | 01-0283434-R0 | SUB ASSY, 97 LED FLASHER - RED |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 20 | 01-0283434-W0 | SUB ASSY, 97 LED FLASHER - WHITE |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 21 | 01-0283434-R2 | SUB ASSY, 97 LED BRAKE/TAI/TURN (MAX) |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 22 | 01-0283434-W1 | SUB ASSY, 97 LED FLOOD - WHITE |
| - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 23 | 01-0283429-B0 | SUB ASSY, 97 LED WIDE ANGLE - BLUE |
| - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 24 | 01-0283429-W0 | SUB ASSY, 97 LED WIDE ANGLE - WHITE |
| 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 25 | 01-0283429-G0 | SUB ASSY, 97 LED WIDE ANGLE - GREEN |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 26 | 38-0481690-00 | GASKET |
| A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | 27 | 21-17060704-3 | GROMMET, FASTEX |

97 SERIES / MOUNTING TEMPLATE

1 inch
+
Wire Hole

IMPORTANT: Templates may not be exactly to scale. Always check all measurements before drilling. Measurements are given in both Decimals and Fractions for convenience. For a more accurate measurement and installation, we recommend you use the Decimals.

