

# WHELEN<sup>®</sup>

ENGINEERING COMPANY INC.

51 Winthrop Road  
Chester, Connecticut 06412-0684  
Phone: (860) 526-9504  
Fax: (860) 526-4078  
Internet: [www.whelen.com](http://www.whelen.com)  
Sales e-mail: [autosale@whelen.com](mailto:autosale@whelen.com)  
Canadian Sales e-mail: [canadiansales@whelen.com](mailto:canadiansales@whelen.com)  
Customer Service e-mail: [custserv@whelen.com](mailto:custserv@whelen.com)

## Installation Guide: 700 Series LED Lighthouse

### 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.**
- **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 any 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<sup>®</sup>, 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.**
- **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!**

**For warranty information regarding this product, visit [www.whelen.com/warranty](http://www.whelen.com/warranty)**

**IMPORTANT NOTICE!** This product has been designed for improved visibility. Prior to installing this product on any vehicle, check your state motor vehicle codes to confirm that this product complies with any and all state statutes.

**Mounting:**

1. Using the dimensions below, mark off and drill the two, 5/16" diameter vent tube holes and the 1" wire hole into the mounting surface. Make sure lighthouse will not interfere with existing equipment and be aware of any items on the opposite side of the mounting surface.

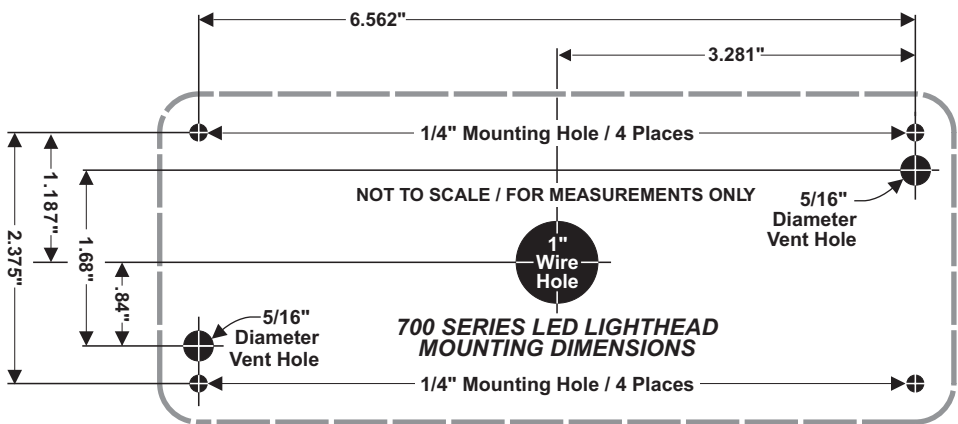
**IMPORTANT WARNING: Always check all measurements before drilling. Measurements are given in both decimals and fractions for your convenience. For a more accurate measurement and installation, use the decimals.**

2. Insert the two vent tubes extending from the rear of the lighthouse into their holes. Using a scribe or similar tool, mark off the 4 mounting holes.

3. Using a 1/4" drill bit, drill the four mounting holes. Install a grommet (customer supplied) into the 1" wire hole.

4. Using appropriately sized wires (minimum 18 AWG wire size), extend the lighthouse wires to their connections (see "Wiring Options"). Fuse the +12VDC connections at 3 Amps and test the lighthouse before securing it to the vehicle.

**Note:** Some 700 series lighthouses are equipped with the SYNC feature. These lighthouses will have an extra grey wire (See below).



5. Position the lighthouse components onto the mounting surface and secure to the vehicle using the flange grommet and four supplied #6 x 1-1/4" sheet metal screws.

**WARNING!** 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.

**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 the load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!

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

**Flash Pattern Synchronization (SYNC):**

A SYNC feature is available on selected models. This allows two (or more) lighthouses to flash the same, synchronized pattern in either simultaneous or alternating mode. In order to enable SYNC mode, it is necessary for the GREY wires from each lighthouse to be connected together.

There is only one pattern available to a SYNC-capable lighthouse, offering both a simultaneous and alternating mode:

**SignalAlert™ 75 Simultaneous mode** - 75 fpm (Factory Default)

**SignalAlert™ 75 Alternating mode** - 75 fpm

To help understand how to use SYNC, the principals will be applied to a sample system consisting of 4 lighthouses, with 2 mounted on the rear, driver side of the vehicle and 2 mounted on the rear, passenger side.

**Specifications:**

**BRAKE/TAIL/TURN**

**LED Assembly** - 120 LEDs (MAX)  
**Input Voltage** - 12.8 VDC ±20%  
**Input Current** - Tail - 0.125 Amps  
 - Brake - 0.70 Amps  
**Default Pattern** - SignalAlert™ Brake

**LED Assembly** - 56 LEDs (MIN)  
**Input Voltage** - 12.8 VDC ±20%  
**Input Current** - Tail - 0.075 Amps  
 - Brake - 0.375 Amps  
**Default Pattern** - SignalAlert™ Brake

**WIDE ANGLE WARNING**

**Input Voltage** - 12.8 VDC ±20%  
**Input Current** - 0.40 Amps (Blue / White / Green)  
 - 0.45 Amps (Amber / Red)  
**Default Pattern** - RapidFire™ 375

**TURN**

**Input Voltage** - 12.8 VDC ±20%  
**Input Current** - 0.70 Amps  
**Default Pattern** - SignalAlert™ Brake

**BACK-UP (12V)**

**Input Voltage** - 12.8 VDC ±20%  
**Input Current** - 0.300 Amps  
**Default Pattern** - Steady On

**BACK-UP (24V)**

**Input Voltage** - 25.6 VDC ±20%  
**Input Current** - 0.150 Amps  
**Default Pattern** - Steady On

**ARROW**

**Input Voltage** - 12.8 VDC ±20%  
**Input Current** - 0.475 Amps  
**Default Pattern** - Sequence Arrow 150

**DUAL COLOR**

**Input Voltage** - 12.8 VDC ±20%  
**Input Current** - 0.475 Amps  
**Default Pattern** - RapidFire™ 680

**SYNC**

**Input Voltage** - 12.8 VDC ±20%  
**Input Current** - 0.475 Amps  
**Default Pattern** - SignalAlert™ (Simultaneous)

**IMPORTANT WARNING!**  
**CAUTION! DO NOT LOOK DIRECTLY AT THESE LEDS WHILE THEY ARE ON. MOMENTARY BLINDNESS AND/OR EYE DAMAGE COULD RESULT!**

With all the wiring complete, turn on the 4 lighthouses. As shipped from the factory, all the lighthouses will be flashing simultaneously.

To configure, for example, the passenger side lighthouses to alternate with the driver side lighthouses, change the flash patterns for either the passenger or driver side lighthouses to Alternating

**Important!** SYNC-capable LED lighthouses can be SYNCed to SYNC-capable strobe power supplies (such as the CS240S) by wiring their grey wires together. When connected as such, LED lighthouses in their default pattern (simultaneous) will flash simultaneously with strobe lighthouses connected to the GREEN wire outputs. LED lighthouses configured for the alternating pattern will flash simultaneously with strobe lighthouses connected to the WHITE wire outputs. GREEN wire outputs always alternate with WHITE wire outputs.

## Scan-Lock™ (White/Violet)

**WARNING:** Pattern selection requires the LEDs to be turned on. Do not look directly at the LEDs while the unit is on.

**TO CHANGE PATTERNS:** Apply +VBAT to the WHITE/VIOLET wire for less than 1 second and release to cycle forward to the next available pattern. Apply +VBAT to the WHITE/VIOLET wire for more than 1 second and release to cycle back to the previous pattern. Allow the pattern to run for more than 5 seconds to set as the default pattern..

**TO RESTORE FACTORY DEFAULT PATTERN:** With the power to the lighthouse off, apply +VBAT to the WHITE/VIOLET wire. Now turn power to the lighthouse on. The factory default pattern should now be displayed.

A Normally Open momentary switch can be used to control Scan-Lock.

**IMPORTANT SPLIT LED NOTE:** This lighthouse will not have a Scan-Lock™ wire. You will find 2 sets of programming pins protruding from the LED side of the circuit board. Where the Scan-Lock instructions say “apply +12 volts to the Scan-Lock wire”, short the pins out with a penny (or other electrical conducting item). For a Split SMT LED lighthouse, there will be 2 sets of programming pins. Both sides can be programmed separately using the same procedure as a regular LED lighthouse.

### Flash Patterns:

1. SignalAlert™ 75
2. SignalAlert 150
3. SingleFlash 375
4. SingleFlash 150
5. SingleFlash 75
6. SingleFlash 150
7. DoubleFlash 150
8. DoubleFlash 75
9. CometFlash® 75
10. ActionFlash™
11. ModuFlash™
12. ComAlert™
13. ActionScan™
14. SignalAlert Steady
15. Steady (Brake)

### Brake Patterns:

1. SignalAlert Steady
2. Steady Brake

### SYNC Patterns:

1. SignalAlert 75 (Sim.)
2. SignalAlert 75 (Alt.)

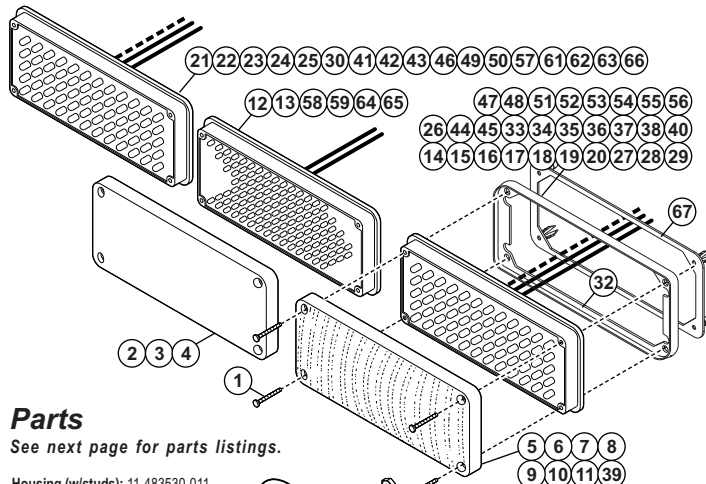
### Arrow Patterns:

1. Seq. to Solid 150
2. Seq. to Solid 80

3. Seq. to Solid (Steady On - Fast)
4. Seq. to Solid (Steady On - Slow)
5. SignalAlert to Steady On
6. Steady On

### Dual Color Patterns:

1. SingleFlash 680 (Alt.)
2. SingleFlash 240 (Alt.)
3. SingleFlash 120 (Alt.)
4. SingleFlash 150 (Sim.)
5. DoubleFlash 240 (Alt.)
6. DoubleFlash 120 (Alt.)
7. DoubleFlash 150 (Sim.)
8. CometFlash® 120 (Alt.)
9. CometFlash 120 (Sim.)
10. ActionFlash (Alt.)
11. ActionFlash (Alt. - Sim.)
12. ModuFlash (Alt.)
13. ModuFlash (Sim.)
14. SignalAlert 120 (Alt.)
15. SignalAlert 100 (Sim.)
16. ActionScan (Alt. - Sim.)
17. Action Single
18. CH.1 Steady-CH.2 SF120
19. CH.1 Steady-CH.2 Action Single
20. CH.1 Steady-CH.2 CometFlash
21. CH.1 Steady-CH.2 FastAction



### Parts

See next page for parts listings.

Housing (w/studs): 11-483530-011  
Housing: 11-483530-111  
Mounting Hardware & Gasket:  
01-0483596-00

For use with:  
HALOGEN, STROBE  
or LED lighthouses

For use with:  
HALOGEN, STROBE  
or LED lighthouses

Housing: 11-463255-011  
Housing w/Studs: 11-463255-111  
Mounting Hardware & Gasket:  
01-0463331-00

For use with: LED lighthouses  
Flange Kit: Without Seal 01-0462920-00  
With Seal 01-0462920-01

For use with:  
HALOGEN, STROBE  
or LED lighthouses  
Lighthouse Housing:  
Drivers Side: 01-0462735-01  
Passengers Side: 01-0462736-01

### Available Mounting Options

Mini-Grill-Master Housing:  
Black: 01-0483777-01  
Chrome: 01-0483777-02  
For use with: STROBE  
or LED lighthouses

Swivel Mount Kit:  
Black: 11-481138-00  
Chrome: 01-0441293-00

Surface Mount Housing: For use with:  
Black: 01-0464758-00 HALOGEN, STROBE  
Chrome: 01-0464758-01 or LED lighthouses

### Wiring Options

**NOTE:** In some instances two ground wires are shown for reference. This is to show both the 12 volt and 24 volt models. The lighthouse will have either one or the other depending on model.

#### MAX BIAS

LED Color.....Positive (+)  
Black (12V) or  
Black-White (24V)...Ground

#### FLOOD or BACK-UP

White.....Positive (+)  
Black (12V) or  
Black-White (24V)...Ground

#### WIDE ANGLE

LED Color.....Positive (+)  
Black (+12V) or  
Black-White (24V)..Ground  
White-Violet.....Scan-Lock™

#### BRAKE-TAIL-TURN

Yellow....Brake / Positive (+)  
Brown.....Tail / Positive (+)  
White (12V) or  
White-Black (24V)...Ground  
White-Violet.....Scan-Lock™

#### SPLIT

LED Color 1.....Positive (+)  
LED Color 2.....Positive (+)  
Black.....Ground

#### SYNC

LED Color.....Positive (+)  
Grey.....SYNC  
Black (12V).....Ground

#### TURN

LED Color.....Positive (+)  
Black (12V) or  
Black-White (24V)...Ground  
White-Violet.....Scan-Lock™

#### ARROW

LED Color.....Positive (+)  
Black (12V) or  
Black-White (24V)...Ground  
White-Violet...Scan-Lock™

