

# WHELEN<sup>®</sup>

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## Installation Guide: 400 Series Linear Super-LED<sup>®</sup> 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.**
- **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)**

## Installation:

**WARNING!** The LED models designated external flasher must be connected to an electronic flasher. Allowing the LED to steady burn will damage the lighthouse and void the warranty.

**External Flasher Models:** 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.

**Caution: Permanent mounting of this product will require drilling. It is absolutely necessary to make sure that no other vehicle components could be damaged by this process. Check both sides of the mounting surface before starting. If damage is likely, select a different mounting location.**

- Follow the dimensions shown. On the mounting surface, mark off and drill four mounting holes for a #6 sheet metal screw and a 1" wire passage hole in the center. Always check all measurements before drilling.
- Using appropriately sized wires (minimum wire size / 18 AWG), extend the lighthouse wires to their connections. Fuse the +12VDC connections at 3 Amps and test operation of lighthouse before securing it to vehicle.
- Position the lighthouse onto the mounting surface and secure to the vehicle using four #6 x 1-1/2" sheet metal screws.

## Wiring:

**WIRE FUNCTIONS:** External Flasher

LED Color - Positive / +12V

BLACK - Ground

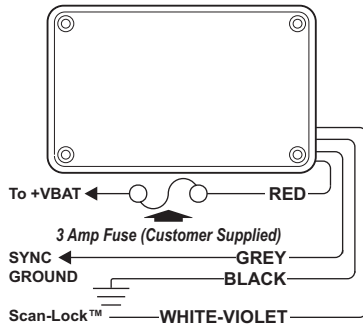
**WIRE FUNCTIONS / On-Board Flasher**

LED Color - Positive / +12V

BLACK - Ground

GREY - SYNC

WHITE-VIOLET - Scan-Lock™



**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 be FUSED at the battery to carry that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**

**Scan-Lock™:** 400 Series lighthouses (with 4 wires) have a special set of flash patterns, with each pattern available in two modes; Phase 1 and Phase 2. The patterns are changed with the WHITE-VIOLET wire.

When the lighthouse is turned on, the default pattern is displayed.

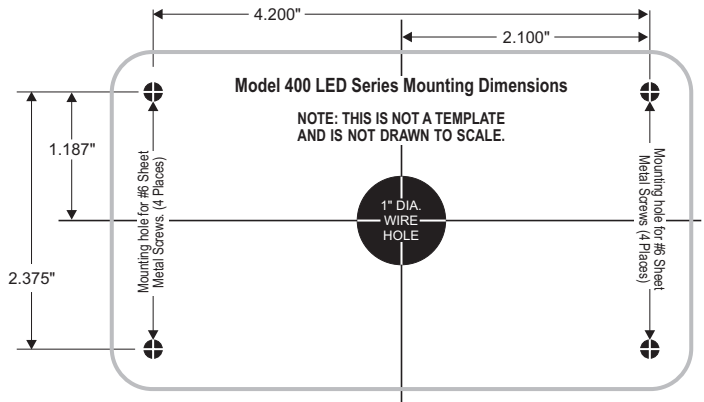
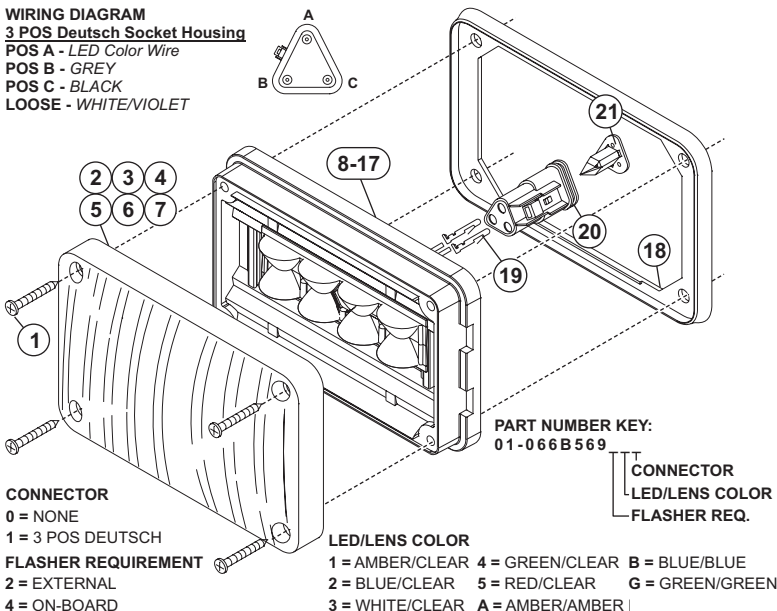
**To advance to the next pattern:** With the lighthouse on, apply positive voltage to the WHITE-VIOLET wire for less than 1 second and release. Repeat the procedure to advance the lighthouse to the next pattern.

**To lock in a pattern.** While cycling through the patterns, let a pattern run for more than 5 seconds and it will become the default pattern.

**To cycle backwards to previous patterns:** With the lighthouse on, apply positive voltage to the WHITE-VIOLET wire for more than 1 second and release.

**To reset to the factory default pattern:** Turn off power to the lighthouse. While applying positive voltage to the WHITE-VIOLET wire, turn the lighthouse back on. Continue to apply voltage to the WHITE-VIOLET wire for 5 seconds.

**WIRING DIAGRAM**  
3 POS Deutsch Socket Housing  
POS A - LED Color Wire  
POS B - GREY  
POS C - BLACK  
LOOSE - WHITE/VIOLET



**Using the SYNC feature with more than 2 lighthouses:** To understand how to use the SYNC feature with more than 2 lighthouses, the principles will be applied to a sample system consisting of 4 lighthouses. 2 are mounted on the rear, driver side of the vehicle and 2 on the rear, passenger side of the vehicle. With all the wiring complete, turn on the 4 lighthouses. As shipped from the factory, all the lighthouses will simultaneously display the same pattern (SignalAlert™ / Phase 1).

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 Phase 2 mode of the same pattern.

**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 power supply's GREEN output wire. LED lighthouses configured for the alternating pattern will flash simultaneously with strobe lighthouses connected to the power supply's WHITE output wire. GREEN output wires always alternate with WHITE output wires.

**Available Flash Patterns: \* = California Title XIII compliant**

- SYNC Patterns:**
- SignalAlert™ 75 Phase 1
  - SignalAlert™ 75 Phase 2
  - CometFlash®75Phase 1
  - CometFlash™ 75 Phase 2
  - DoubleFlash 75 Phase 1
  - DoubleFlash 75 Phase 2
  - SingleFlash 75 Phase 1
  - SingleFlash 75 Phase 2 \*
  - ComAlert™ 75 Phase 1
  - ComAlert™ 75 Phase 2
  - LongBurst™75 Phase 1
  - LongBurst™ 75 Phase 2
  - PingPong™75 Phase 1
  - PingPong™ 75 Phase 2
  - SingleFlash 120 \*
  - SingleFlash 300
  - DoubleFlash 150
  - ComAlert™ 150
  - ActionFlash™ 1
  - ActionFlash 2
  - ModuFlash™
  - ActionScan™
  - Steady

## IMPORTANT WARNING!

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

**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!

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

QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
	*			01-066 B 5692_0	LIGHTHEAD, 400 LINEAR TIR LED 2-WIRE
	*			01-066 B 5694_0	LIGHTHEAD, 400 LINEAR TIR LED 4-WIRE
	*			01-066 B 5694_1	LIGHTHEAD, 400 LINEAR TIR LED 4-WIRE/DEUTSCH
4	4	4	1	15-061416-240	SCREW, #6 X 1 1/2 PPHSMS
A/R	A/R	A/R	2	68-1183726 A1S	OPTIC LENS - LENS AMBER
A/R	A/R	A/R	3	68-1183726 A2S	OPTIC LENS - LENS BLUE
A/R	A/R	A/R	4	68-1183726 A3S	OPTIC LENS - LENS CLEAR
A/R	A/R	A/R	5	68-1183726 A4S	OPTIC LENS - LENS GREEN
A/R	A/R	A/R	6	68-1183726 A5S	OPTIC LENS - LENS RED
-	-	A/R	7	68-1183726 A5S	OPTIC LENS - ECE BLUE
-	-	A/R	8	not sold separately	400 LINEAR TIR LED - AMBER/2-WIRE
-	-	A/R	9	not sold separately	400 LINEAR TIR LED - BLUE/2-WIRE
-	-	A/R	10	not sold separately	400 LINEAR TIR LED - WHITE/2-WIRE
-	-	A/R	11	not sold separately	400 LINEAR TIR LED - GREEN/2-WIRE
-	-	A/R	12	not sold separately	400 LINEAR TIR LED - RED/2-WIRE
A/R	A/R	-	13	not sold separately	400 LINEAR TIR LED - AMBER/4-WIRE
A/R	A/R	-	14	not sold separately	400 LINEAR TIR LED - BLUE/4-WIRE
A/R	A/R	-	15	not sold separately	400 LINEAR TIR LED - WHITE/4-WIRE
A/R	A/R	-	16	not sold separately	400 LINEAR TIR LED - GREEN/4-WIRE
A/R	A/R	-	17	not sold separately	400 LINEAR TIR LED - RED/4-WIRE
1	1	1	18	38-0463924-00	GASKET
3	-	-	19	39-1H00326-35	SOCKET, DEUTSCH
1	-	-	20	39-1H03024-35	HOUSING, 3 POS SOCKET DEUTSCH
1	-	-	21	39-1H16424-3S	WEDGE, 3 POS DEUTSCH