

# WHELEN<sup>®</sup>

## ENGINEERING COMPANY INC.

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### Installation Guide: 400 Series LED Lighthead

#### 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

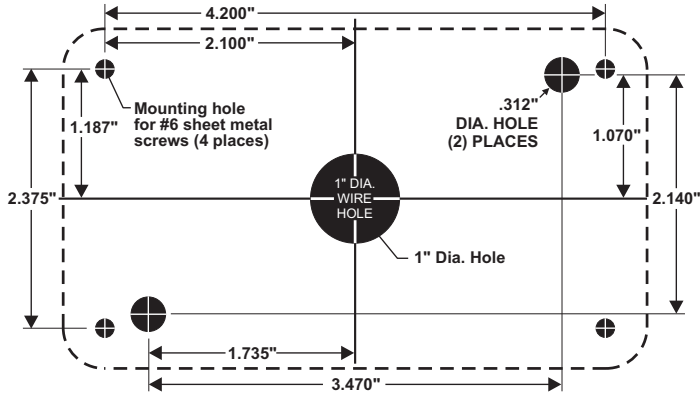
This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained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

- **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.**
- **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!**

**Caution:** This product is 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:**

- Using the dimensions below, mark off and drill the two 5/16" diameter vent tube holes and the 1" center wire hole into the mounting surface. **Check measurements before drilling.**



**Note:** Make sure lighthouse will not interfere with existing equipment and be aware of any items on the opposite side of the mounting surface.

- Insert the 2 vent tubes extending from the rear of the lighthouse into their holes. With a scribe or similar tool, mark off the 4 mounting holes.
- Using a drill bit sized for a #6 sheet metal screw (and the thickness of the mounting surface), drill the four mounting holes. Install a grommet (customer supplied) into the 1" wire hole.
- Using appropriately sized wires (minimum 18 AWG wire size), run the lighthouse wires to their connections (see wire designations on pg. 3). Fuse the +VBAT 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 1-1/4" sheet metal screws.

**Caution: 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!**

**Caution:** 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.

**Scan-Lock™ (White/Violet)**

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

**IMPORTANT:** If you have a 24 volt lighthouse, you will apply 24 volts to the Scan-Lock wire for flash pattern selection.

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

**TO CHANGE THE DEFAULT PATTERN:** When the desired pattern is displayed, allow it to run for more than 5 seconds. The lighthouse will now display this pattern when initially activated.

**TO RESTORE THE FACTORY DEFAULT PATTERN:** With the power to the lighthouse off, apply +12 volts to the WHITE/VIOLET wire. Now turn power to the lighthouse on. The factory default pattern should now be displayed.

**NOTE:** A Normally Open momentary switch can be used to control Scan-Lock™ operation.

**Flash Patterns:** SignalAlert™ 75 > SignalAlert™ 150 > SingleFlash 375 > SingleFlash 150 > SingleFlash 75 > SingleFlash 150 > DoubleFlash 150 > DoubleFlash 75 > CometFlash® 75 > ActionFlash™ > ModuFlash™ > ComAlert™ > ActionScan™ > SignalAlert™ Steady > Steady (Brake) **Available Brake Patterns:** SignalAlert™ Steady > Steady Brake

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

**WIRE COLOR      FUNCTION**

**BRAKE / TAIL / TURN**  
 Yellow ..... Stop, Turn / Positive (+)  
 Brown ..... Taillight / Positive (+)  
 White (12V) ..... Ground  
 White/Black (24V) ..... Ground  
 White/Violet ..... Scan-Lock™

**WIDE ANGLE / FLOOD**

Colored Wire ..... Positive (+)  
 Wire color is whatever the color its LED is, when the light is switched on.  
 Black (12V) ..... Ground  
 Black/White (24V) ..... Ground  
 White/Violet ..... Scan-Lock™

**BACK-UP / TURN**

White ..... Positive (+)  
 Black ..... Ground  
 Black/White (24V) ..... Ground

**ORDERING INFORMATION**

01-0683759



**STYLE**

2 = B/T/T (MIN)  
 5 = WIDE-ANGLE  
 6 = FLOOD  
 7 = BACK-UP  
 9 = TURN-CLEARANCE  
 B = B/T/T (MAX)  
 G = BACK-UP (24V)  
 E = B/T/T (MAX - 24V)

**L.E.D. / LENS COLOR**

A = AMBER / AMBER  
 B = BLUE / BLUE  
 C = WHITE / CLEAR  
 G = GREEN / GREEN  
 R = RED / RED  
 1 = AMBER / CLEAR  
 2 = BLUE / CLEAR  
 4 = GREEN / CLEAR  
 5 = RED / CLEAR

**TERMINATION**

0 = NONE  
 1 = DEUTSCH

QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
															*		01-06837595A0	LIGHTHEAD 400 LED WIDE-ANGLE, AMBER
														*			01-06837595B0	LIGHTHEAD 400 LED WIDE-ANGLE, BLUE
													*				01-06837595C0	LIGHTHEAD 400 LED WIDE-ANGLE, WHITE
												*					01-06837595G0	LIGHTHEAD 400 LED WIDE-ANGLE, GREEN
											*						01-06837595R0	LIGHTHEAD 400 LED WIDE-ANGLE, RED
										*							01-06837596C0	LIGHTHEAD 400 LED FLOOD, WHITE
									*								01-06837597C*	LIGHTHEAD 400 LED BACK-UP, WHITE
								*									01-06837599A0	LIGHTHEAD 400 LED TURN/CLEARANCE, AMBER
								*									01-066E462-R0	LIGHTHEAD 400 LED B/T/T, RED LENS
								*									01-066E462-R1	LIGHTHEAD 400 LED B/T/T, RED LENS (DEUTSCH®)
					*												01-06837596C1	LIGHTHEAD 400 LED FLOOD, WHITE (DEUTSCH)
					*												01-06837595*1	LIGHTHEAD 400 LED WIDE-ANGLE (DEUTSCH)
					*												01-06837595G C1	LIGHTHEAD 400 LED BACK-UP, 24V, WHITE (DEUTSCH)
					*												01-06837595ER1	LIGHTHEAD 400 LED B/T/T, MAX, 24V, RED (DEUTSCH)
*																	15-061416-200	SCREW, #6 X 1 1/4" PPHSMS
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	1	68-3183725-1S	LENS, NON OPTIC, AMBER with SEAL
-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	68-3183725-3S	LENS, NON OPTIC, CLEAR with SEAL
-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	3	68-3183725-5S	LENS, NON OPTIC, RED with SEAL
1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	4	68-1183726-1S	LENS, OPTIC, AMBER with SEAL
-	-	A/R	-	-	-	-	-	-	-	-	-	-	-	-	-	5	68-1183726-2S	LENS, OPTIC, BLUE with SEAL
-	-	A/R	-	-	-	-	-	-	-	-	-	-	-	-	1	6	68-1183726-3S	LENS, OPTIC, CLEAR with SEAL
-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	7	68-1183726-4S	LENS, OPTIC, GREEN with SEAL
-	-	A/R	-	-	-	-	-	-	-	-	1	-	-	-	-	8	68-1183726-5S	LENS, OPTIC, RED with SEAL
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	01-0283458-52	SUB ASSY, LED B/T/T, MIN
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	10	01-0283458-15	SUB ASSY, LED WIDE-ANGLE, AMBER
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	11	01-0283458-25	SUB ASSY, LED WIDE-ANGLE, BLUE
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	12	01-0283458-35	SUB ASSY, LED WIDE-ANGLE, WHITE
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	13	01-0283458-45	SUB ASSY, LED WIDE-ANGLE, GREEN
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	14	01-0283458-55	SUB ASSY, LED WIDE-ANGLE, RED
-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	15	01-0283458-36	SUB ASSY, LED FLOOD, WHITE
-	-	-	-	-	-	-	-	-	-	A/R	-	-	-	-	-	16	01-0283458-37	SUB ASSY, BACK-UP, WHITE
-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	17	01-0283458-19	SUB ASSY, TURN/CLEARANCE, AMBER
-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	18	01-026E462-50	SUB ASSY, B/T/T
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	10-0522905***	LABEL
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	38-0262867-00	GASKET
-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	21	01-026E462-51	SUB ASSY, B/T/T (DEUTSCH)
-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	22	02-0383458136	SUB ASSY, LED FLOOD, WHITE (DEUTSCH)
-	-	A/R	-	-	-	-	-	-	-	-	-	-	-	-	-	23	02-0383458115	SUB ASSY, LED WIDE-ANGLE, AMBER (DEUTSCH)
-	-	A/R	-	-	-	-	-	-	-	-	-	-	-	-	-	24	02-0383458125	SUB ASSY, LED WIDE-ANGLE, BLUE, (DEUTSCH)
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	02-0383458155	SUB ASSY, LED WIDE-ANGLE, RED (DEUTSCH)
-	-	-	-	-	-	-	-	-	-	A/R	-	-	-	-	-	26	02-0383458137	SUB ASSY, BACK-UP, WHITE (DEUTSCH)
-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	02-038345813G	SUB ASSY, BACK-UP, 24V, WHITE (DEUTSCH)
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	02-038345815E	SUB ASSY, B/T/T, MAX, 24V (DEUTSCH)
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29		

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

