

# WHELEN<sup>®</sup>

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## Installation Guide: Raider™ LED Lightbar (Dual 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 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 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!**

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

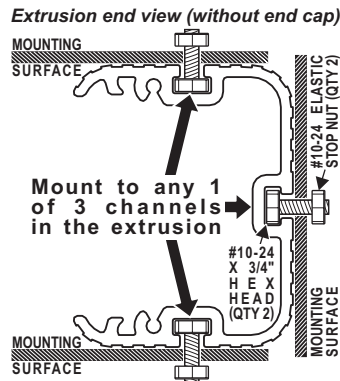
## Specifications:

**Input Voltage:** 12.8 VDC +/- 20%  
**Input Current:** Peak - 400ma / Avg - 160ma  
**Sync Phase:** Phase I & II @ 400ms  
**Input Scan-Lock™:** +12 VDC

## Installation:

**Note:** When routing wires, it is very important that you choose a path that will keep the wires away from any excessive heat or any vehicle equipment that could compromise the integrity of the wires (ex. trunk lids, door jams, etc.).

- Position the unit in its proposed mounting location. Draw a pencil line onto the mounting surface along the top and bottom of the extrusion and a "centerline" centered between the two.
- Two 1/4" holes are required to mount this unit. These holes may be located anywhere along the horizontal centerline that you drew in step one. It's best to locate the holes as far apart as possible. Mark the hole location onto the mounting surface.
- Using a 1/4" drill bit, drill a hole in each of the areas scribed in the previous step.
- Slide the two hex-head mounting bolts (included) into the channel provided at either the rear, top or bottom of the extrusion depending on which way you wish to mount the lightbar.
- Align these bolts with the 2 mounting holes and insert them into the mounting holes.
- Install an elastic stop nut onto each bolt and tighten firmly.

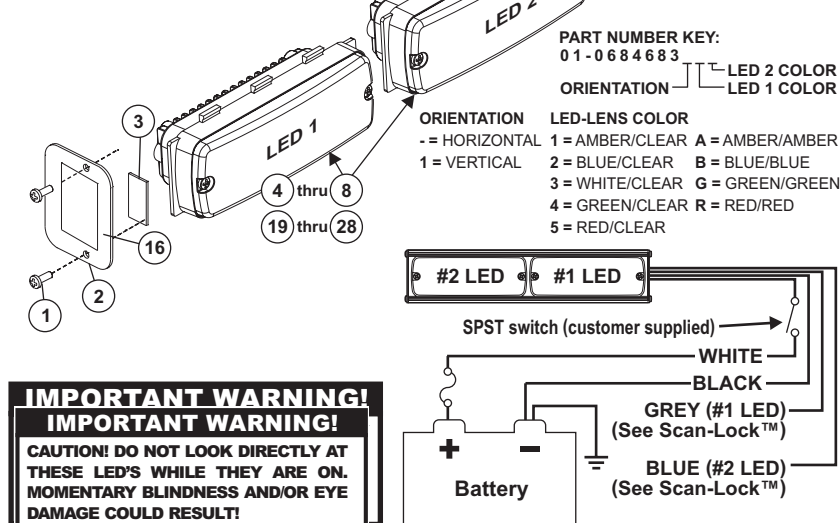


## Wiring: Refer to the wiring diagram below.

**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!**

## Scan-Lock™ (BLUE and GREY)

Patterns are selected using a Scan-Lock™ wire. There is a Scan-Lock™ wire for each lighthouse. The GREY wire is for LED #1; the BLUE wire is for LED #2.



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

The two lighthoods can display the same patterns simultaneously (Phase 1) or alternating (Phase 2). To configure the lighthoods to simultaneous display, set both lighthoods to Phase 1 of the same pattern.

To configure the two lighthoods to alternate their patterns, advance the pattern of either lighthouse to the Phase 2 mode of the that same pattern.

**To advance to the next pattern,** apply +12 VDC to the desired Scan-Lock™ wire for less than 1 second. To cycle backwards to previous patterns, apply +12 VDC for more than 1 second.

**To reset to the factory default pattern,** begin by turning off power to the lighthouse. While applying +12 VDC to both Scan-Lock wires, turn the lighthouse back on. Continue to apply voltage to these wires for 5 seconds.

Remember, lighthoods configured to display the Phase 1 mode of a given pattern will flash simultaneously. Any lighthoods configured to display the Phase 2 mode of a pattern, will alternate with any Phase 1 lighthoods with the same pattern.

## Available Scan-Lock™ Patterns

- |                                   |                       |
|-----------------------------------|-----------------------|
| 1 - SignalAlert™ . . . . .Phase 1 | 15 - SingleFlash 60*  |
| 2 - SignalAlert™ . . . . .Phase 2 | 16 - SingleFlash 90*  |
| 3 - CometFlash® . . . . .Phase 1  | 17 - SingleFlash 120* |
| 4 - CometFlash® . . . . .Phase 2  | 18 - SingleFlash 300* |
| 5 - DoubleFlash . . . . .Phase 1  | 19 - DoubleFlash 300* |
| 6 - DoubleFlash . . . . .Phase 2  | 20 - ComAlert™ 150*   |
| 7 - SingleFlash . . . . .Phase 1  | 21 - ActionFlash™ 1*  |
| 8 - SingleFlash . . . . .Phase 2  | 22 - ActionFlash™ 2*  |
| 9 - ComAlert™ . . . . .Phase 1    | 23 - ModuFlash™*      |
| 10 - ComAlert™ . . . . .Phase 2   | 24 - ActionScan™*     |
| 11 - LongBurst™ . . . . .Phase 1  | 25 - Steady*          |
| 12 - LongBurst™ . . . . .Phase 2  |                       |
| 13 - PingPong™ . . . . .Phase 1   |                       |
| 14 - PingPong™ . . . . .Phase 2   |                       |

\*Non-syncable patterns

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

QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
*	*		01-0684683-__	DUAL EXTERNAL
*	*		01-06846831__	DUAL EXTERNAL VERTICAL
4	4	1	14-062219-06D	SCREW / 6-32 X 3/8 PPH ROLOX
1	1	2	11-243354-007	ENDCAP without HOLE 500 SERIES
2	2	3	38-0143142-01	GASKET / ENDCAP
-	AR	4	01-0664633153	500 LINEAR LED SYNC RED
-	AR	5	01-0664633143	500 LINEAR LED SYNC GRN
-	AR	6	01-0664633133	500 LINEAR LED SYNC CLR
-	AR	7	01-0664633123	500 LINEAR LED SYNC BLU
-	AR	8	01-0664633113	500 LINEAR LED SYNC AMB
1	1	9	11-46A704-010	HOUSING / 500 SERIES 10.812" BLK
1	1	10	26-0215001-06	TY-WRAP / 6" BLK
1	1	11	11-243355-007	ENDCAP with CABLE HOLE 500 SERIES
1	1	12	21-11071006-0	7/32 ID 7/16 OD 3/16 THK GROMMET
1	1	13	46-9441898025	CABLE / 4-C 22 GA 2.5" STRIP 2"/STRIP 1-1/4"
1	1	14	46-076A024-01	HARNES ASSY / SYNC SCAN-LOCK
1	1	15	46-076A024-00	HARNES ASSY / INPUT POWER
1	1	16	10-0523316-__	LABEL
4	4	17	14-104436-120	SCREW / 10-24 X 3/4 HEX HD MS SS
4	4	18	13-104120-062	NUT / 10-24 ELASTIC STOP SS
AR	-	19	01-0664634153	500 LINEAR LED SYNC RED VERT
AR	-	20	01-0664634143	500 LINEAR LED SYNC GRN VERT
AR	-	21	01-0664634133	500 LINEAR LED SYNC WHT VERT
AR	-	22	01-0664634123	500 LINEAR LED SYNC BLU VERT
AR	-	23	01-0664634113	500 LINEAR LED SYNC AMB VERT
-	AR	24	01-06646331A3	500 LINEAR LED SYNC AMB/AMB
AR	-	25	01-06646341A3	500 LINEAR LED SYNC AMB/AMB VERT
-	AR	26	01-06646331B3	500 LINEAR LED SYNC BLUE/BLUE
-	AR	27	01-06646331G3	500 LINEAR LED SYNC GRN/GRN
-	AR	28	01-06646331R3	500 LINEAR LED SYNC RED/RED