

51 Winthrop Road  
Chester, Connecticut 06412-0684  
Phone: (860) 526-9504  
Sales Email: autosale@whelen.com  
Canadian Sales: canadiansales@whelen.com  
Customer Service: custserv@whelen.com

**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 any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.
- 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.
- Waterproof butt splices and/or connectors are required if that connection could be exposed to moisture. Any unused wires must be sealed (waterproofed) to prevent moisture infiltration.
- **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!**
- **FAILURE TO FOLLOW THESE PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

## Mounting

1. Drill two mounting holes (sized for #6 sheet metal screws and the mounting surface thickness) and a 1/2" wire passage hole into the mounting surface. De-burr wire passage hole before proceeding. **Confirm that no vehicle parts could be damaged by the drilling process.** Be sure to de-burr these three holes before continuing.
2. Using appropriately sized wire (22 AWG min.), extend the ION wires through the mounting gasket and mounting surface. Install a switch and fuse (customer supplied) as specified and make all of the connections shown in the Wiring Diagram.
3. Secure the ION to the mounting surface using the hardware provided.

## Operation

**Ground (BLK)** - Extend BLK wire to Chassis Ground.

**COLOR 1 (LED Color)** - Extend this wire to +12VDC via an SP/ST switch (Fuse at 3 A).

**COLOR 2 (LED Color)** - Extend this wire to +12VDC via an SP/ST switch (Fuse at 3 A).

**Scan-Lock™ (WHT/VIO)** - Extend the WHT/VIO wire to +12VDC via a momentary switch (1 amp fuse).

**Scan-Lock™ - Pattern Buffer Note:** This model features 3 pattern buffers; Color 1, Color 2 and Colors 1&2 (activated simultaneously). Each buffer will display its own flash pattern when activated. To change the flash pattern for any of the three pattern buffers, that buffer must be active.

**To advance to the next pattern,** apply +12VDC to the VIO wire for less than 1 second.

**To cycle backwards,** apply +12VDC for more than 1 second.

**To reset to the factory default pattern,** turn off power to the lighthouse. While applying +12VDC to the VIO, turn the lighthouse back on and continue to apply voltage for 5-6 seconds.

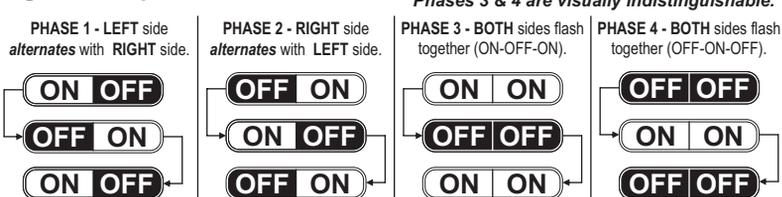
**Steady-Lock™** - When connected to a Core™ control system, a lighthouse doesn't require manually scanlocking to the steady pattern. All populated outputs can be sent a Steady-Lock™ signal from Whelen Command®, automatically setting their pattern to Steady. A minimum Whelen Command® version of 2.2.9 is required for this Steady-Lock™ feature.

**Sync (GREY)** - Lighthouses configured to display the Phase 1 mode of a pattern will flash simultaneously. Any lighthouses configured to display the Phase 2 mode will alternate with any Phase 1 lighthouses with the same pattern.

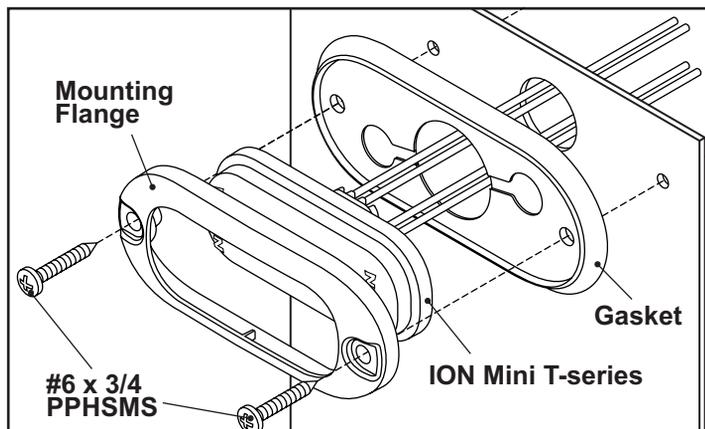
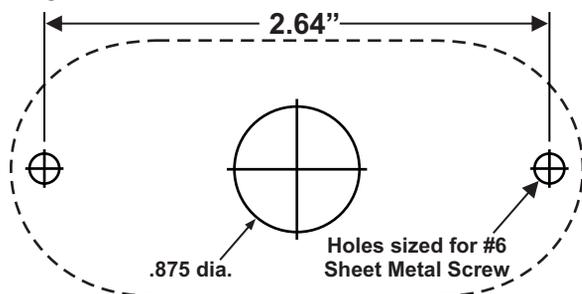
**Pattern Override** - When the input wires for both colors are activated simultaneously, the color(s) displayed (the Override color) will depend on the pattern selected for each color. Refer to the table below for details. Pattern override is only available on DUO light heads.

If Color 1 Pattern # is...	and Color 2 Pattern # is...	then the Override Color is...
other than #33	other than #33	Color 1
#33	other than #33	Color 1
other than #33	#33	Color 2
#33	#33	Color 2

## Lighthouse Operation:



## Mounting Dimensions



## Flash Patterns

### SYNC Flash Patterns

1. SignalAlert™ 75 PH1
2. SignalAlert™ 75 PH2
3. ComAlert™ 75 PH1
4. ComAlert™ 75 PH2
5. CometFlash 75 PH1
6. CometFlash 75 PH2
7. LongBurst™ 75 PH1
8. LongBurst™ 75 PH2
9. PingPong™ 75 PH1
10. PingPong™ 75 PH2
11. SingleFlash 75 PH1
12. SingleFlash 75 PH2
13. DoubleFlash 75 PH1
14. DoubleFlash 75 PH2
15. TripleFlash 75 PH1
16. TripleFlash 75 PH2

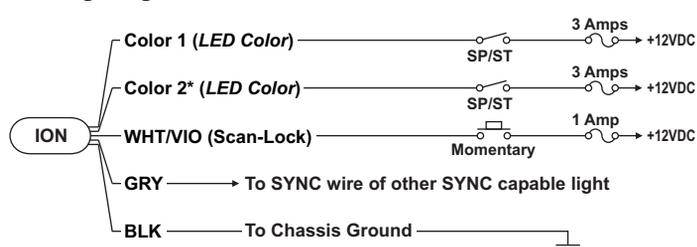
### Non-SYNC Flash Patterns

17. SingleFlash 60
18. SingleFlash 90
19. SingleFlash 120
20. SingleFlash 240
21. DoubleFlash 120
22. TripleFlash™ 120
23. ComAlert™ 150
24. PingPong™ 120
25. ActionFlash™ 60
26. ActionFlash™ 120
27. ActionFlash™ SF 60/120
28. ActionFlash™ SF120/TF75
29. ModuFlash™
30. CalScan™
31. ActionScan™
32. SignalAlert™ STEADY
33. STEADY

Ph1 = Phase 1

Ph2 = Phase 2

## Wiring Diagram



*\*Note: Solo light head will have one color wire*