




PHAZER ESSENTIAL SERIES

Ultra Low Profile Modular Lightbar

Installation, Basic Programming, and Operation Manual





 **WARNING!** This light utilizes high-intensity LED Lamps. DO NOT stare directly into the light while it is on, as momentary blindness and/or permanent eye damage may occur.




455 Rochester Street Avon, NY 14414
585-226-9500 (F) 888-478-2797
www.StarSafetyTechnologies.com

Please Note: These instructions are provided as a general guideline only. Some vehicles may require special mounting, wiring, and/or weather-sealing. This is the sole responsibility of the installer. Star Safety Technologies assumes no responsibility for the integrity of the installation for this or any of its products.

 **WARNING!** It is the sole responsibility of the owner to ensure the lightbar is mounted securely. Check your light every time you enter the vehicle to ensure that it is mounted securely. The manufacturer assumes no responsibility for the secure mounting of this light.

 **PLEASE NOTE: THE DIRECT MOUNT IS THE STANDARD MOUNT INCLUDED WITH THE LIGHTBAR. THE HOOK MOUNTS MUST BE USED ON ALL POLICE AND/OR OTHER EMERGENCY VEHICLES!!!**
THE HOOK MOUNTS ARE SOLD SEPARATELY. THEY ARE NOT INCLUDED WITH EACH LIGHTBAR. THEY MUST BE ORDERED SEPARATELY. SEE THE ACCOMPANYING HOOK MOUNT SHEET FOR A COMPLETE LIST OF AVAILABLE MOUNTS AND KNOWN VEHICLE APPLICATIONS.

 When mounting this lightbar, please be sure to keep any radio frequency sensitive equipment at least 20" from the bar and power cable(s). Our circuits have been designed to limit RFI emissions, but certain very sensitive equipment may still be affected. Symptoms may include, but are not limited to, sporadic operation and degraded performance. Star Safety Technologies cannot assume any responsibility for any radio frequency induced malfunction or damage to any radios, sirens, lightbars, or any other equipment mounted within 20" this lightbar. Any antennae mounted in the proximity of the lightbar may cause your radio to suffer the aforementioned results.

Mounting Instructions

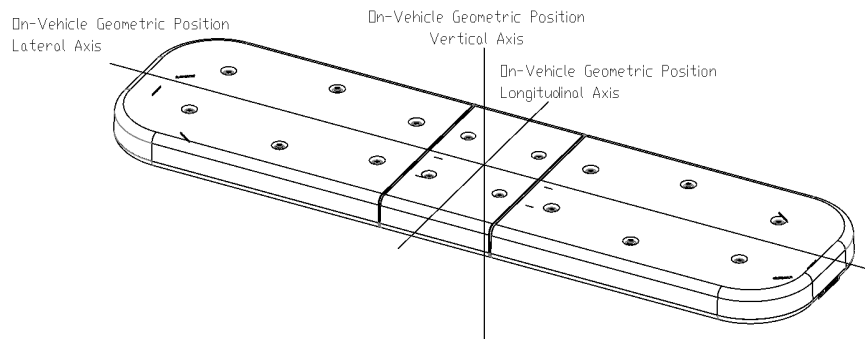
Please review the separate Mounting Bracket manual that is also enclosed with your bar for mounting instructions.



ECE Compliant Mounting



If your application requires you to adhere to ECE regulations, you must mount the bar such that it is correctly oriented along all axes of the vehicle as diagrammed below. Failure to mount the bar in this manner will negate ECE compliance.



Wiring Instructions

All standard lightbar models are designed for 12VDC negative ground vehicles only. Reverse polarity may cause serious damage to the lightbar and/or vehicle. Contact the automotive dealer if there are any doubts about the polarity of your vehicle.



RF INTERFERENCE

Please take the following steps to help eliminate any Radio Frequency Interference (RFI) with your two-way radio.

- DO NOT run the power wire for the lightbar along same path as any antenna wires.
- DO NOT run the power wire for the lightbar along same path as any radio power wires.
- DO NOT tap power for the lightbar off of the radio power wires.
- DO NOT mount the lightbar within 20" of any antennae. Sometimes mounting the lightbar or antenna over by just one foot can make a large difference in the interference.
- Ensure the black wire from the lightbar has a good connection to the **negative side of the battery**.

- All standard Phazer lightbars come with a 15' cable (with a shield/drain wire) that is used to control the various functions of the lightbar. All wires are color coded and sized at the correct gauge. If this length is not sufficient, it is recommended that the wire harnesses be completely replaced, rather than splicing onto the current cable. This will reduce the number of wire connections and help prevent any weathering problems on these connections.
- **CAUTION: All wires and switches should be rated for at least 125% of their maximum current load.** In addition, the red power wire should be connected to the positive terminal of the battery and fused at the battery for 125% of its rated load. The current for each component is listed on the custom design form that is enclosed with each bar. **Do not use** a 1/4" diameter glass fuse, as it is not suitable for continuous duty above 20 amps. If you are unsure of the current draw, please contact our Customer Service Department.
- **TESTING THE LIGHTBAR BEFORE IT IS PROPERLY FUSED WILL VOID THE WARRANTY!!**
- The black ground wire should be connected to the negative terminal of your vehicle's battery. This wire should be at least #12 AWG wire and be as short as possible in order to minimize the voltage loss in this wire and reduce any chance of overheating.
- The *Wire Functions* section on the next page lists the different wire colors and the lights controlled by those wires. Your harness WILL contain all of the colored wires, the drain wire, and a foil shield, although they may not all be utilized.

Wire Functions

This lightbar is shipped with a multi-conductor wiring harness pre-installed. Please review the list below for the functions of each wire in the harness. Additional details about the specific heads that are controlled by each wire/function can be found in the **Bar Programming** and **Enable List** sheets that included with the paperwork enclosed with each bar.

Black: (GROUND) - The black wire is the ground wire and MUST be connected on EVERY lightbar to the negative terminal of the battery.


Bare Wire: (Drain/Shield/GROUND) - This wire will help eliminate RFI. We recommend that it be connected to ground.

Red: (Power/+12VDC) - Provides the main power to the controller. Connect the red wire directly to continuous +12VDC through a high-current fuse.

Please Note: When the red wire is connected to +12VDC the lightbar will draw a small current (< 0.001A). If your vehicle will be sitting for extended periods of time (i.e. more than a few days), it is recommended the red wire be routed through a switch or ignition switched relay.

Green w/Red: (Pattern Select) - Touch and Release to +12VDC to cycle through flash patterns (see next page).

(Phase or Head Activation Select) - Available through Advanced Programming Only - Touch and Release to Ground to cycle through Phase options or Head Activation Options. (Review the Advanced Programming manual for details)

 **Please note:** The Red w/Green Stripe wire is only used when programming. This wire MUST NOT be connected to continuous +12VDC or Ground!! Once all of the patterns have been selected, tape the end of this wire off.

PLEASE NOTE: All power wires listed below should be connected to +12VDC through a switch and fused with a 5 amp fuse.

Orange w/Red: (Enable 1) - Typically enables all front flashing lights.

Yellow: (Enable 2) - Typically enables all rear flashing lights.

White w/Brown: (Enable 3 / AUX) - Typically enables all steady burn lights or activates Cruise Mode.
(Note: This wire can optionally be reprogrammed to be used as a Dim function. For details please contact the factory for the Advanced Programming Manual.)

Green w/Yellow: (TD Left) - Enables Left directional arrow function. (Overrides other functions)
Orange w/Green: (TD Right) - Enables Right directional arrow function. (Overrides other functions)

} Activating both produces Center-Out Pattern

Flash Pattern Programming

This lightbar has been designed to allow you to change the Warning Pattern (Enables 1 and 2), and the Traffic Directing Pattern Style (Left/Right/Center-Out).

Please note that the pattern for Enable 1 and 2 will be the same as one another, and the Pattern Style for all of the traffic directing patterns will be the same as each other.

1. Connect the **BLACK** wire to **GROUND** and connect the **RED** wire to **POWER** (+12VDC).
2. To program the Warning Enable Wire Pattern, connect the **ORANGE w/RED** wire and the **YELLOW** wire to **POWER**.
To program the Traffic Directing Pattern Styles, connect the **GREEN w/YELLOW** wire or the **ORANGE w/GREEN** wire to **POWER**.
3. Briefly touch and release the Pattern Select Wire (**GREEN w/RED** stripe) to **POWER** to scroll through the patterns listed below. There is a separate chart for the Enable Wire Patterns and the Traffic Directing Pattern Styles.
Note: At any time you can shortcut to the pattern with the asterisk by holding the pattern select wire to **POWER** for 3 seconds (1 flash).
4. Once you have the pattern you like, disconnect the function wire from power.
5. Repeat steps 1-4 if you wish to program the other function.
6. Once your programming is complete, tape the end of the red w/green stripe wire so that it does not come into contact with **POWER**.

Patterns for Enable Wire Functions

- 1 SAE Quintflash, Fast Singleflash * †
 - 2 Fast Doubleflash †
 - 3 Fast Tripleflash †
 - 4 Superfast Doubleflash ** †
 - 5 Fast Quadflash †
 - 6 Quadflash †
 - 7 Quadflash w/Post Pop †
 - 8 Slow Singleflash †
 - 9 Slow Doubleflash †
 - 10 Quintflash w/Post Pop †
 - 11 Flicker
 - 12 Quintflash, Fast Single ***
 - 13 Delta-Omega
 14. SAE Combo 1 †
 15. SAE Combo 2 †
- * Shortcut Pattern #1 (3 sec/1 flash)
** Shortcut Pattern #4 (6 sec/2 flashes)
*** Shortcut Pattern #12 (9 sec/3 flashes)
† SAE approved pattern when properly configured

Pattern Styles for Traffic Director

- 1 Snake (factory default) * †
 - 2 Standard
 3. 6-Head TD with End Flash
 - 4 Standard w/End Blink
 - 5 Two-Head Traveling
 - 6 Fast ** †
 - 7 Ultra-Fast †
 - 8 Four Head Traveling †
 - 9 Snake Pop †
 - 10 Pop
 - 11 Arrowhead on Ends *** †
 - 12 Marquee
- * Shortcut Pattern #1 (3 sec/1 flash)
** Shortcut Pattern #5 (6 sec/2 flashes)
*** Shortcut Pattern #11 (9 sec/3 flashes)
† SAE approved pattern when properly configured

These instructions only cover the Basic Pattern Programming. For additional details about the Advanced Programming options available on this bar, including how to reset the lightbar to its default programming, please visit our website and review the Docs & Resources tab of the Phazer Essential product page:

www.starsafetytechnologies.com/emergency-police-lights-and-accessories/1400-es-1500-es-phazer-essential

Service

LED FIVE YEAR LIMITED WARRANTY

Star Safety Technologies warrants this LED light against factory defects in material and workmanship for five years after the date of manufacture. The owner will be responsible for returning to the Service Center any defective item(s) with the transportation costs prepaid. The manufacturer will, without charge, repair or replace *at its option*, products, or part(s), which its inspection determines to be defective. Repaired or replacement item(s) will be returned to the purchaser with transportation costs prepaid from the service point. A copy of the purchaser's receipt must be returned with the defective item(s) in order to qualify for the warranty coverage. Exclusions from this warranty include, but are not limited to, domes, and/or the finish. This warranty shall not apply to any light, which has been altered, such that in the manufacturer's judgment, the performance or reliability has been affected, or if any damage has resulted from abnormal use or service.

There are no warranties expressed or implied (including any warranty of merchantability or fitness), which extend this warranty period. **The loss of use of the product, loss of time, inconvenience, commercial loss or consequential damages, including costs of any labor, are not covered.** Star reserves the right to change the design of the product without assuming any obligation to modify any product previously manufactured.

This warranty gives you specific legal rights. You might also have additional rights that may vary from state to state. Some states do not allow limitations on how long an implied warranty lasts. Some states do not allow the exclusion or limitation of incidental or consequential damages. Therefore, the above limitation(s) or exclusion(s) may not apply to you.



If you have any questions concerning this or any other product, please contact our **Customer Service Department** at (585) 226-9787.

If a product must be returned for any reason, please contact our Customer Service Department to obtain a Returned Materials Authorization number (RMA #) before you ship the product back. Please write the RMA # clearly on the package near the mailing label.

NOTICE

Due to continuous product improvements, we must reserve the right to change any specifications and information, contained in this manual at any time without notice. Star Safety Technologies, Inc. makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Star shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.



455 Rochester Street Avon, NY 14414
585-226-9500 (F) 888-478-2797
www.StarSafetyTechnologies.com