STAR PHAZER™

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.

PROUDLY MADE IN THE USA
An ISO 9001:2008 Certified Company

NOTICE

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 Headlight & Lantern Co., Inc. 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.
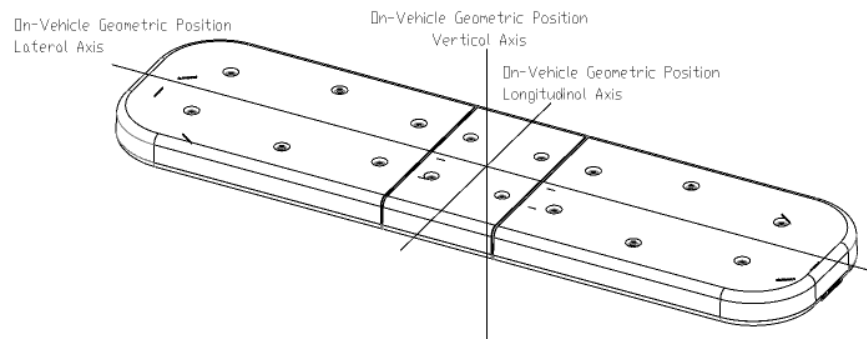
⚠ *When mounting your lightbar, please be sure to keep any radio frequency sensitive equipment at least 20" from the bar and power cable(s). This is especially critical in lightbars utilizing strobes. Our strobe power supplies have been designed to limit RFI emissions, but certain very sensitive equipment may still be affected. Symptoms may include, but are not limited to, sporadic operation and degraded performance. Star Headlight & Lantern Co., Inc. cannot assume any responsibility for any radio frequency induced malfunction or damage to any radios, sirens, lightbars, or any other equipment mounted within 20" a strobe 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.

Mounting Instructions

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

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' 14-conductor cable (plus 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 #10 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

PLEASE NOTE:

- This lightbar is shipped the wiring harness installed. Please review the **Cable Assembly Checklist** enclosed with your bar for proper identification of your wires. Each lightbar will have its own unique wiring key.

- This harness(es) will contain a power wire (red) a ground wire (black) and 12 colored wires for various functions. *Most applications will not use every wire*. The "dead" wires in the harness will run into the connector, but will not be labeled on the **Cable Assembly Checklist**. These "dead" wires can be used for additional components that may be added at some point in the future.

   Black: *(GROUND) -* The black wire is the ground wire and MUST be connected on EVERY lightbar.

   Red: *(Power/+12VDC) -* The red wire 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 pack 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.***

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

   Red w/Green: *(Pattern Select/Touch and Release to +12VDC) -* The red w/green stripe wire is used to select the flash pattern of your LEDs. ***It will normally remain unconnected*** to your switchbox. (For more detailed instructions, review the ***Basic Pattern Programming*** section on the following page).

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

   All Other Colors: The remaining wires are typically On/Off controls for the functions indicated on your **Cable Assembly Checklist** enclosed with your bar. Most lightbars will not use every color wire.

   Connect the wires that your lightbar utilizes to +12VDC through your switches (not included).

Basic Pattern Programming

> ⚠️ **CAUTION !!**
> **To change the pattern on any bar enable wire that has more than one color enabled on a single light head, please see the Advanced Programming Manual. Simply cycling the pattern wire in this situation may result in undesired flashing patterns such as both colors in a single light head turning on simultaneously.**

1. Connect the BLACK wire to GROUND and connect the RED wire to POWER (+12VDC).

2. Activate the feature that you wish to program by touching the corresponding wire for it to power.

3. Briefly touch and release the Pattern Select Wire (red w/green stripe) to +12VDC to scroll through the patterns. You can "jump" to various patterns by holding the Pattern Select Wire to power (+12VDC) for the length of time indicated in the chart below.

4. Once you have the pattern you like, disconnect the function wire from power.

5. Repeat steps 1-4 for each additional function you wish to program.

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 +12VDC.

Patterns for Warning Lights

California Title 13 / SAE J595 Approved Patterns (1–12)

1 Flicker * *(ICL default)*
2 Slow Singleflash
3 Fast Singleflash
4 Slow Doubleflash
5 Fast Doubleflash
6 Slow Tripleflash *(Priority 1 default)*
7 Fast Tripleflash *(TDP default)*
8 Quadflash
9 Quintflash
10 Tripleflash w/Post Pop
11 Quadflash w/Post Pop *(Priority 2 default)*
12 Quintflash w/Pre Pop
13 ECE Doubleflash
14 ECE Quadflash
15 Singleflash Flicker **
16 Doubleflash Flicker *(Dual Color Front Priority 3 default)*
17 Single, Quad w/Post Pop, Flicker
18 Dual Color Single Quad Flicker
19 Dual Color Quad Post Pop Quint
20 Dual Color Flicker
21 Delta-Omega
22 Random 1
23 Random 2 *** *(Single Color Priority 3 & Dual Color Rear Priority 3 Color 1 default)*
24 Random 3
25 Flashing Bounce
26 Full Bounce
27 Split Bounce
28 Half Bounce
29 Bounce w/End Pop
30 Search Lights
31 Eyeballz
32 Fade Invert
33 Moving Out
34 Triple In/Triple Out
35 Two Speed *(Pursuit default)*
36 Random 4
37 Dual Color Full Circle
38 Rotator
39 Sparkle

* Shortcut Pattern #1 (3 sec/1 flash)
** Shortcut Pattern #2 (6 sec/2 flashes)
***Shortcut Pattern #3 (9 sec/3 flashes)

Pattern Styles for Traffic Director
(Left, Right, and Center Out functions all use the same pattern)

California Title 13 / SAE J595 Compliant Patterns (5–8)

1 Standard *
2 6-Head TD with End Flash
3 Standard w/End Blink
4 Two-Head Traveling
5 California Title 13 **
6 California Title 13 Fast
7 Four Head Traveling
8 Snake
9 Pop

* Shortcut Pattern #1 (3 sec/1 flash)
** Shortcut Pattern #2 (6 sec/2 flashes)

> ⚠️ Please note: All California Title 13, SAE J595, and ECE approved patterns need to be configured properly to ensure compliance with those specifications.

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Advanced Programming

Advanced Programming is optional. Most users will NOT need to program any of these features. If the default settings are acceptable, skip to the Operation section.

Advanced Programmable features include the following:

- Head Enable (which heads activate with each function)
- Phase Selection (which heads alternate and which flash simultaneously)
- Changing the Wire Functions
- TD/Warning Pattern Cycling
- Resetting to Factory defaults
- Title 13 Programming

If you wish to change the programming for any of these features please review the Phaser Advanced Programming Manual which can be found at:

http://star1889.com/APM

or by contacting Customer Service at 585-226-9787 or CustomerService@star1889.com.

Operating Instructions

Functions Switched Through Wires

Main control of this light is done though the wires in the harness. They should be connected to +12VDC through several switches *(user supplied)* as described in the ***Wiring*** section.

Priority 1 Flashing
> This is usually intended as a slower, less urgent mode typically used when parked.

Priority 2 Flashing
> This mode is intended for moderate-urgency situations, such as a low speed chase, requiring some warning power. It is usually a faster pattern than Level 1.
> The Level 2 pattern will override Priority 1 lights.

Priority 3 Flashing
> This mode is intended for high-urgency situations, such as a high speed chase, requiring significant warning power. It is usually a faster pattern than Level 1 or 2 and/or may utilize more lights.
> The Level 3 pattern will override both Priority 1 and Priority 2 lights.

All additional Functions
> Any additional functions that were designed into the lightbar will have corresponding control wires that are labeled on the **Cable Assembly Checklist** enclosed with your bar. Applying +12VDC to any of these wires will activate the corresponding function.

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.

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