



Ultra Low Profile Modular Lightbar

Installation, Basic Programming, and Operation Manual



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 9001:2015 Certified Company

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 Safety Technologies, Inc. and/or the manufacturer 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.

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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, Inc. assumes no responsibility for the integrity of the installation for this or any of its products.



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.



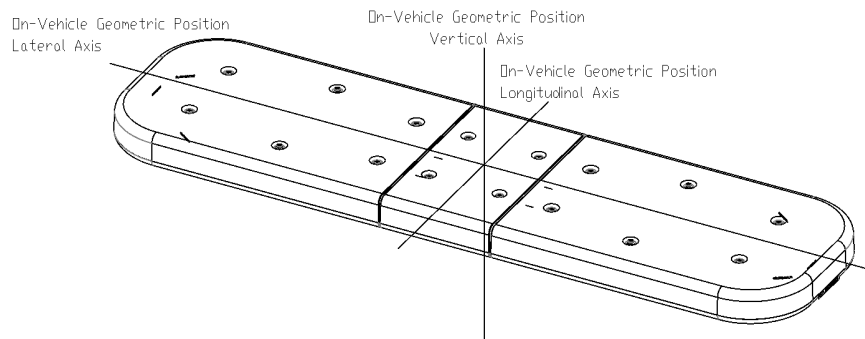
When mounting your lightbar, please be sure to keep any radio frequency sensitive equipment at least 20" from the bar and power cable(s). This is especially critical in lightbars utilizing strobes. Our strobe power supplies have been designed to limit RFI emissions, but certain very sensitive equipment 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 detailed mounting instructions.



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.



Electrical Connection

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**.

General Wiring Notes

- All standard 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 contains a list of the various 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 with 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. This wire MUST NOT be connected to continuous +12VDC!! 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




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.

- Connect the BLACK wire to GROUND and connect the RED wire to POWER (+12VDC).
- Activate the feature that you wish to program by touching the corresponding wire for it to power.
- 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.
- Once you have the pattern you like, disconnect the function wire from power.
- Repeat steps 1-4 for each additional function you wish to program.
- 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.

SAE J595 Approved Patterns	California Title 13	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39	<p>Patterns for Warning Lights</p> <p>Flicker * (ICL default)</p> <p>Slow Singleflash</p> <p>Fast Singleflash</p> <p>Slow Doubleflash</p> <p>Fast Doubleflash</p> <p>Slow Tripleflash (Priority 1 default)</p> <p>Fast Tripleflash (TDP default)</p> <p>Quadflash</p> <p>Quintflash</p> <p>Tripleflash w/Post Pop</p> <p>Quadflash w/Post Pop (Priority 2 default)</p> <p>Quintflash w/Pre Pop</p> <p>ECE Doubleflash</p> <p>ECE Quadflash</p> <p>Singleflash Flicker **</p> <p>Doubleflash Flicker (Dual Color Front Priority 3 default)</p> <p>Single, Quad w/Post Pop, Flicker</p> <p>Dual Color Single Quad Flicker</p> <p>Dual Color Quad Post Pop Quint</p> <p>Dual Color Flicker</p> <p>Delta-Omega</p> <p>Random 1</p> <p>Random 2 *** (Single Color Priority 3 & Dual Color Rear Priority 3 Color 1 default)</p> <p>Random 3</p> <p>Flashing Bounce</p> <p>Full Bounce</p> <p>Split Bounce</p> <p>Half Bounce</p> <p>Bounce w/End Pop</p> <p>Search Lights</p> <p>Eyeballz</p> <p>Fade Invert</p> <p>Moving Out</p> <p>Triple In/Triple Out</p> <p>Two Speed (Pursuit default)</p> <p>Random 4</p> <p>Dual Color Full Circle</p> <p>Rotator</p> <p>Sparkle</p> <p>* Shortcut Pattern #1 (3 sec/1 flash)</p> <p>** Shortcut Pattern #2 (6 sec/2 flashes)</p> <p>*** Shortcut Pattern #3 (9 sec/3 flashes)</p>
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Pattern Styles for Traffic Director
(Left, Right, and Center Out functions all use the same pattern)

- | | | | |
|-----------------------------|---------------------|---|---|
| SAE J595 Compliant Patterns | California Title 13 | 1
2
3
4
5
6
7
8
9 | <p>Standard *</p> <p>6-Head TD with End Flash</p> <p>Standard w/End Blink</p> <p>Two-Head Traveling</p> <p>California Title 13 **</p> <p>California Title 13 Fast</p> <p>Four Head Traveling</p> <p>Snake</p> <p>Pop</p> <p>* Shortcut Pattern #1 (3 sec/1 flash)</p> <p>** Shortcut Pattern #2 (6 sec/2 flashes)</p> |
|-----------------------------|---------------------|---|---|

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

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:

www.star1889.com/emergency-police-lights-and-accessories/1000-phazer-led-lightbar

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 through 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.

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.



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