

INSTALLATION AND INSTRUCTION MANUAL

DLHT

Thinline LED Hazard Lights

DLHT-121***
(12 VDC)

DLHT-241***
(24 VDC)



DLHT-124***
(12 VDC)

DLHT-244***
(24 VDC)



STAR
Safety Technologies by *Crote*

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PLIT439 REV. D 2/21/24

Installation Notes

- Installer must have firm knowledge of vehicle electrical systems & emergency equipment. **It is the sole responsibility of the installer to ensure the warning light is secure. The manufacturer assumes no responsibility for the secure mounting of this light.**
- If you need to drill any holes when installing this light, please take care to check that BOTH SIDES of your drilling surface are clear from obstructions.
- Use only soap and water when cleaning product. Use of other chemicals may discolor lens and/or housing, diminishing light output. Replace discolored lenses immediately!

Functionality

- These lights are NOT designed to replace the standard Turn Signals or Hazard lights on your vehicle.
- These lights are NOT designed to act as STOP or Brake lights.
- These lights, when activated via a user-supplied switch, will flash in a pre-programmed warning pattern that is selected at the time of installation.
- If these lights are powered up, and a Turn Signal (blinker) is activated, the corresponding light will mimic the flashing of the Turn Signal. The opposite light will either remain in the warning pattern mode, deactivate (turn OFF), or become Steady Burn, depending upon initial programming of your lights at the time of installation.

Please Note: These instructions are provided as a general guideline only. Specific mounting, wiring, and/or weather-sealing may be necessary and are the sole responsibility of the installer. The manufacturer assumes no responsibility for the integrity of the installation for this or any of its products.



Mounting

Rubber Mounting Gasket (P30047-123)

Mark Screw Holes

- Drill $\frac{1}{8}$ " Holes for Self Tapping Screws
- Drill $\frac{5}{16}$ " Holes if Using Rubber Well Nuts



Mark Wire Hole

- Drill $\frac{3}{8}$ " Hole to Route Wires Through

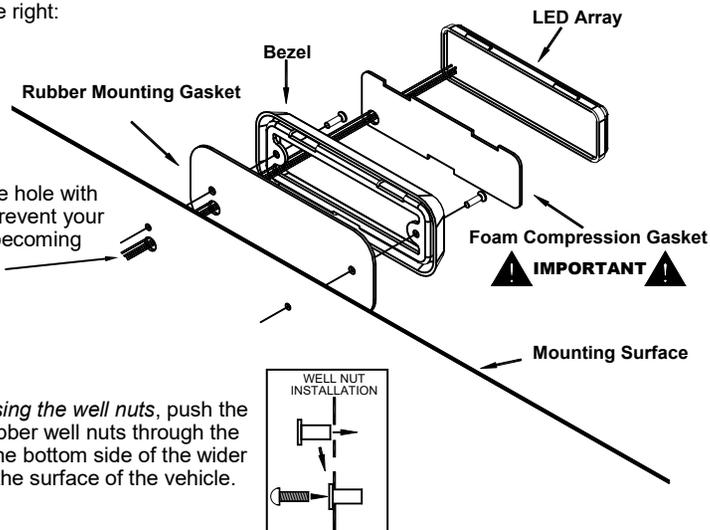


1. Use the gasket as a template to mark your mounting holes.

2. Determine whether you are going to use the self-tapping screws or the machine screws and well nuts..

- Use the self tapping screws for applications where the mounting surface is a minimum of .060" (1/16") thick and is composed of a material that will provide sufficient "bite" for the self tapping screw.
- Use the machine screws and well nuts if your surface is less than .060" thick and/or composed of a material insufficient for securing with self tapping screws.

3. Route the wires as shown to the right:



4. Seal the wire hole with silicone to prevent your wires from becoming damaged.

5. *If you are using the well nuts*, push the enclosed rubber well nuts through the holes until the bottom side of the wider lip rests on the surface of the vehicle.

6. Review the mounting diagram and use the appropriate screws to mount the bezel.

- **Check the gasket to ensure it is resting flat and that there are no gaps between the light and the mounting surface.**
- **Take extreme caution not to over tighten the screws!!! Over tightening of the screws can strip the holes and result in a faulty mount.**



7. Once the bezel is firmly attached to the mounting surface, seat the foam compression gasket inside of it. Carefully feed any loose wire into the wire hole and press the LED head into the bezel.

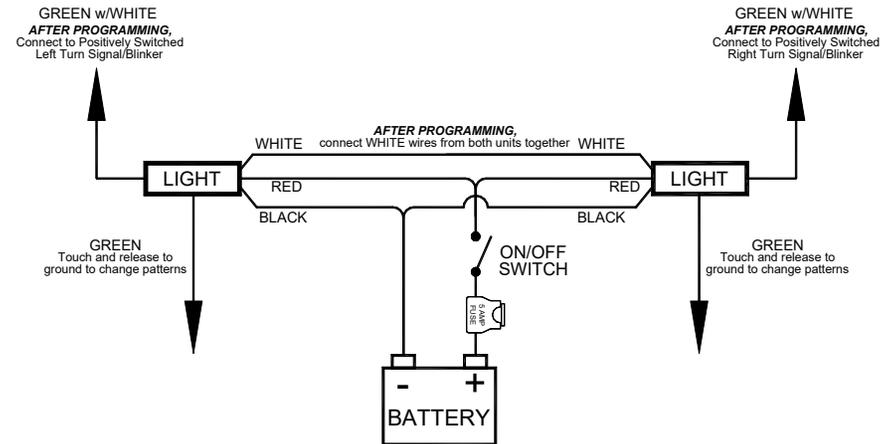
Wiring



When wiring your lights, it is recommended that you take the following precautions to reduce any Electromagnetic Interference (EMI).

- Keep LED modules and any radios as far away from each other as possible.
- Separate the radio wires and the LED wires.
- Any excess wires should be cut short.
- The Ground wire, Power wire, and Synchronization wire should be bound tightly together as they run from light to light, through your switchbox, and to the battery.
- Do not ground each unit independently to the chassis. Run the ground for each unit in a "bus" like structure, to the negative terminal on the battery.

Note: The total wire length between the two farthest units should be no more than 40 feet.



! If you will be synchronizing two or more units together, leave the white wires disconnected until programming for each has been completed. Connect the white wires from the units together **ONLY AFTER PROGRAMMING** them all for the same Pattern Type (Phase MAY differ).

Programming

After the lights have been installed, and **prior to connecting all of your wires**, there are several options you will need to decide upon and program.

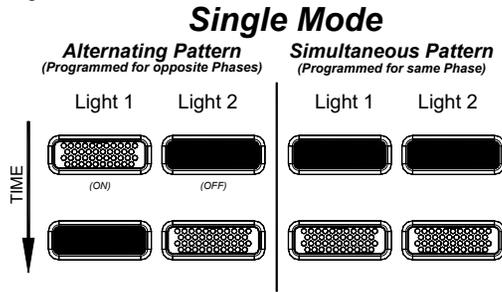
The options **MUST BE PROGRAMMED IN THE PROPER ORDER** before use:

- Single/Split:** Do you want your lights to operate in Single Mode or Split Mode?
- Opposite Light Function** - When your lights are activated in Warning Mode and you turn on your Turn Signal (blinker), what do you want the opposite light to do:
 - Continue flashing in the pre-programmed warning pattern
 - Turn off
 - Become steady burn
- Warning Light Pattern:** What warning pattern do you want displayed when you power up your DLHT lights?

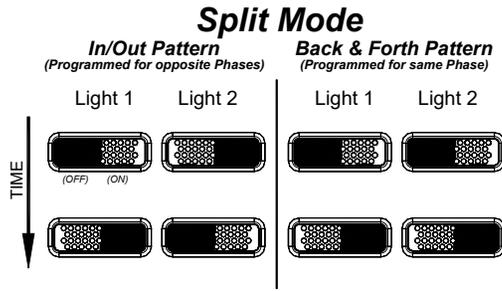
A. Split/Single Mode Programming

You will need to determine whether you wish to run your light(s) in Split Mode or in Single Mode.

In **Single Mode**, the two halves of the light will flash together (simultaneous). This will give the appearance of a "single" light, rather than two halves.



In **Split Mode**, the two halves of the light will flash opposite one another (alternate).



By default, the light comes preset for Single Mode. If Single mode is acceptable, please skip to the **B. Programming the Function of the Light Opposite the Turn Signal** section.

For Split Mode, proceed below:

1. Connect Black, Red, & White wires as listed to the below. Half of the light will illuminate into a steady burn and the other half of the light will flash every three (3) seconds.
2. Touch and hold the Green wire to Ground.
3. After the light blinks once at 3 seconds, then twice at 6 seconds, release the Green wire, wait one second, and disconnect the white wire from power. The light should be in Split Mode.

To change from Split Mode to Single Mode, repeat steps 1 and 2, but instead release the green wire from Ground right after half of the light blinks once at 3 seconds. This will place the light back into Single Mode.



Please note that if you programmed your light as described above, you MUST program the function of the Non-Turn Signal head as described on the next page.

Split/Single Mode Programming Summary

Black - Ground
Red - Power
White - Power
Green - To program hold to Ground

Release Green After: **Mode**
Single Blink (at 3 sec) **Single Mode**
Double Blink (at 6 sec) **Split Mode**

B. Opposite Light Function

When your lights are activated in Warning Mode and you turn on your Turn Signal (blinker), the corresponding head will flash in conjunction with your turn signal. By default, the opposite light will illuminate in a steady burn mode. If instead you would like the opposite light to continue flashing in the pre-programmed warning pattern or turn OFF when the Turn Signal is activated, proceed below:

Connect the Black, Red, and White wires as indicated below. When you hold the Green wire to ground, the light will flash every 3 seconds. After 3 seconds it will blink once, after 6 seconds it will blink twice, after 9 seconds it will blink 3 times, and so on. Use the chart below to determine the proper length to Hold the Green wire to program the desired mode.

Opposite Turn Signal Programming Summary

Black - Ground Red - Power White - Power Green - To program touch to Ground	Release Green After: Opposite Light Mode Triple Blink (9 sec) Steady Burn Mode Quad (4) Blink (12 sec) OFF Quint (5) Blink (15 sec) Warning Pattern
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Once the light flashes the appropriate number of times, remove the Green wire from Ground, then wait 1 second and remove the White wire from power.

C. Warning Pattern Programming

Please note the following points when programming the pattern:

- **DO NOT CONNECT THE WHITE SYNCHRONIZATION WIRES TOGETHER UNTIL EACH LIGHT HAS BEEN PROGRAMMED SEPARATELY!!!**
- Each light has 10 different **Pattern Types** you can cycle through (A-J) in two different **Phases**.
- If you will be synchronizing two heads (most applications), the two heads **MUST** be programmed for the same **Pattern Type**.
- Lights programmed for the same Phase will flash the same, while lights programmed for different Phases will flash opposite one another.
- If you are running in "Split Mode", the two halves will alternate the pattern back and forth.
- For lights running in Split Mode, Patterns 1-10 flash side 1 in Phase 1 and side 2 in Phase 2. Patterns 11-20 flash side 1 in Phase 2, and side 2 in Phase 1.

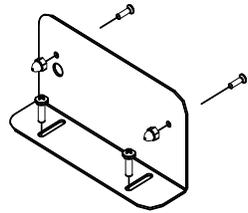
Pattern Programming Summary

Black - Ground
Red - Power
Green - To program touch and release to Ground

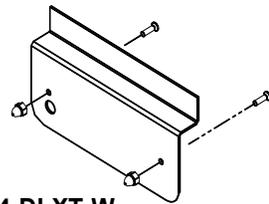
Pattern Shortcuts: Hold Green wire to ground for indicated time.

Flash Pattern #	Phase	Pattern Type	S-LINK SYSTEM Pattern Description	Shortcut
1	11	A	Fast Singleflash (1.9 CPS)	←
2	12	B	Flicker flash (1.7 CPS)	Pattern 1 (Phase 1): 3 sec or 1 flash
3	13	C	Post pop (1.4 CPS)	
4	14	D	PSU-flicker (0.4 CPS)	Pattern 11 (Phase 2): 9 sec or 3 flashes
5	15	E	Random (1.9 CPS) (DEFAULT PATTERN)	
6	16	F	Quadflash (1.0 CPS)	←
7	17	G	Quadflash w/Post-Pop (1.0 CPS)	Pattern 6 (Phase 1): 6 Sec or 2 flash
8	18	H	Singleflash (1.0 CPS)	
9	19	I	Doubleflash (1.0 CPS)	Pattern 16 (Phase 2): 12 sec or 4 flashes
10	20	J	Delta-Omega (0.3 CPS)	

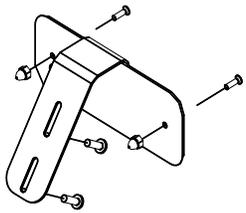
Optional Mounting



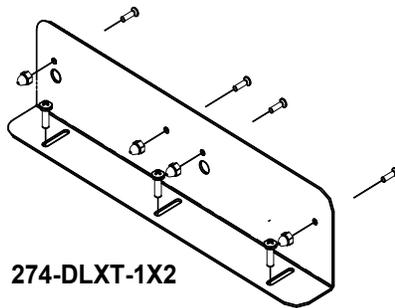
274-DLXT-U



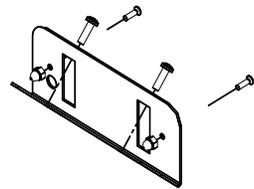
274-DLXT-W



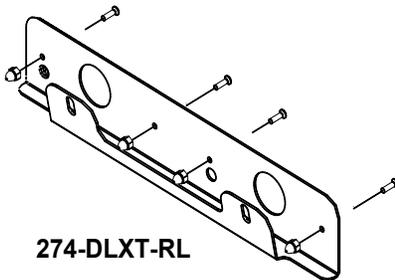
274-DLXT-T



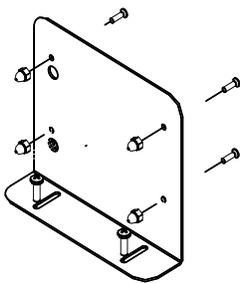
274-DLXT-1X2



274-DLXT-45



274-DLXT-RL



274-DLXT-2X1



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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.

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