

## Features, Installation & Maintenance of the Model ASAP 4X7 Motorcycle Tail Light

Thank you for purchasing the Model ASAP 4X7 Motorcycle Tail Light. The ASAP 4X7 Tail Light uses special High-Intensity LEDs carefully chosen to be easily visible in full sunlight, and extremely noticeable under nighttime driving conditions. In addition, the Model ASAP 4X7 provides the required white light illumination of the license plate with no light source mounted above the ASAP. These features are implemented using all solid state components, and surface mount technology permits all this functionality in just a half inch of space extending along the length of your 4" x 7" motorcycle license plate. The total surface area added to the 28 square inches of license plate is a mere 3 ½ square inches.

Please read all the instructions thoroughly. The ASAP is designed for 12-volt motorcycles using a negative ground system. The ASAP 4X7 consumes very little power (less than 1/2 of an amp.) The circuitry of the ASAP Tail Light has been coated for protection from the elements.

The Model ASAP 4X7 is intended to mount over the top of your 4" x 7" State-issued license plate. Either two or four mounting bolts may be used. The ASAP is not compatible with decorative license plate frames.



**Figure 1: Standard Cover Plate and LED Positions**

With the flip of a switch the turn signal LEDs may be alternatively implemented as brake light LEDs, either in the case of a motorcycle that does not have turn signals or if the user prefers to have more brake lighting over redundant turn signal indicators. If the license plate is to be mounted sideways (e.g. custom applications), the turn signal LEDs will have no horizontal (left-right) reference and should be implemented as brake light LEDs.



**Figure 2: Alternative Cover Plate for Over-the-Top Mounting**

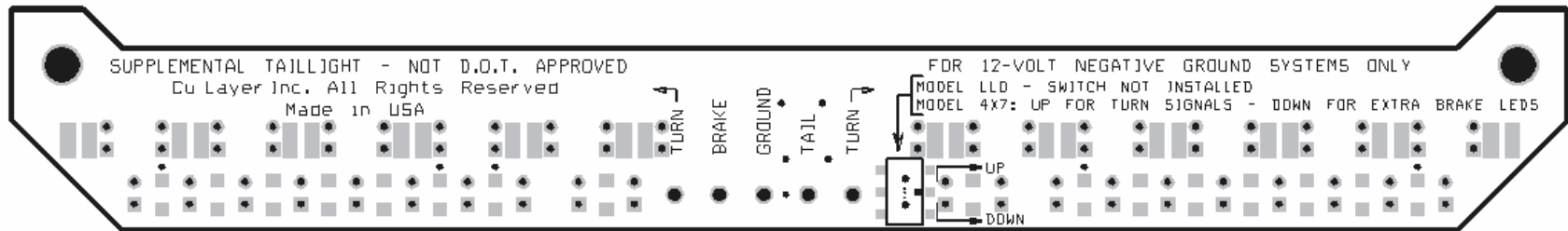
If the LEDs are to be mounted above the license plate, the cover plate may be inverted for aesthetic orientation of the graphics. To invert the graphics, carefully take off the cover plate by removing the two flathead Philips screws (back side) and 5/16" nylon insert locknuts (front of unit.)

Be careful when withdrawing the flathead screws as there are two small spacers between the ASAP circuit board and cover plate which will drop out and could easily be lost. Gently lift the cover plate straight up and over the LEDs by pulling the cover from all its edges a little at a time.

When the cover plate is removed it may be turned over and reassembled in reverse order.

**CAUTION: DO NOT OVERTIGHTEN THE FLAT HEAD SCREWS OR NYLON LOCKNUTS.**

Over-tightening can cause the acrylic panel to break. Tighten just until the nylon locknuts bring the ASAP circuit board flush and snug with the acrylic panel.



**Figure 3: Rear View of the ASAP 4X7**

## **Basic installation of the ASAP Tail Light**

Mechanical installation is simply mounting the ASAP over the top of your license plate. Two or four bolts may be used. The use of white plastic license plate bolts causes the bolts to glow; this visual effect may be desirable.

### **Three connections are essential to proper operation of the ASAP Tail Light**

Basic electrical installation is done with only 3 wires, GROUND, TAIL and BRAKE. The two TURN terminals of the connector block are only used for applications where motorcycle turn signals are to be incorporated. For your convenience several 2-foot long wires of differing colors have been provided for the purpose of connecting the ASAP to your motorcycle's wiring harness. You can use almost any wire, but 14, 16 or 18 AWG is a good size because of its common use in wiring harnesses and its adaptability to commonly available automotive connectors.

In general, most motorcycles run a tail light wire and a brake light wire to a single lamp socket holding a dual-filament incandescent tail light bulb. The tail light wire connects to a low wattage filament terminal on the socket while the brake light wire connects to a higher wattage (brighter) filament terminal. The bulb socket also serves to make a connection to the bulb's metal bayonet sleeve – the

sleeve is then connected to the motorcycle's frame with a 'ground' wire from the socket to the frame or by metal bracketing of the bulb socket to the frame.

Basic 3-wire installation requires that two wires, "TAIL" and "BRAKE" be connected from the ASAP's terminal block to the tail and brake light wires of the motorcycle's harness leading to the tail light bulb as described above. Refer to Figure 3 and Figure 4 for the positions of these wires at the ASAP terminal block. Strip the wire ends of insulation for terminal block interconnection. Be sure to tighten the terminal block screws securely on the wire ends.



Tap-splice connectors are provided with the ASAP to allow for a solderless tap connection of the TAIL and BRAKE wires to the motorcycle's existing tail light wiring. These solderless connectors may also be used to splice two wires together.

The third wire connection "GROUND" is made from the ASAP's terminal block to any metal frame contact and is generally accomplished by using a ring tongue terminal under a bolt or screw head.

If turn signals will not be implemented on the ASAP 4X7, place the selector switch in the DOWN position (See Figure 3 and Photo 2.)

## **Adding turn signal connections to the ASAP Tail Light**

A motorcycle's rear turn signals are typically implemented with a wire for each directional (right and left) to each rear mounted turn signal lamp socket holding a single-filament incandescent light bulb. Turn signal wire connects to the bulb's filament while the bulb socket makes a connection to the bulb's metal bayonet sleeve and connects it to the motorcycle's frame ground.

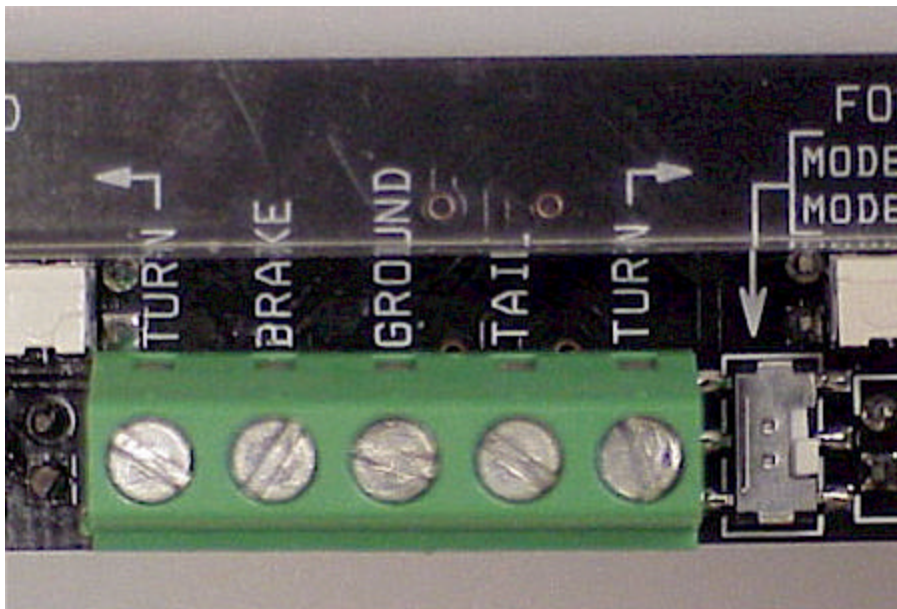
Turn signal installation requires that two wires be connected from the ASAP's terminal block to the tail and brake light wires of the motorcycle's harness leading to the tail light bulb as described above. Refer to Figure 3 and Photo 1 for the positions of the wires at the ASAP terminal block.

Strip the wire ends of insulation for terminal block interconnection. Be sure to tighten the terminal block screws securely on the wire ends.

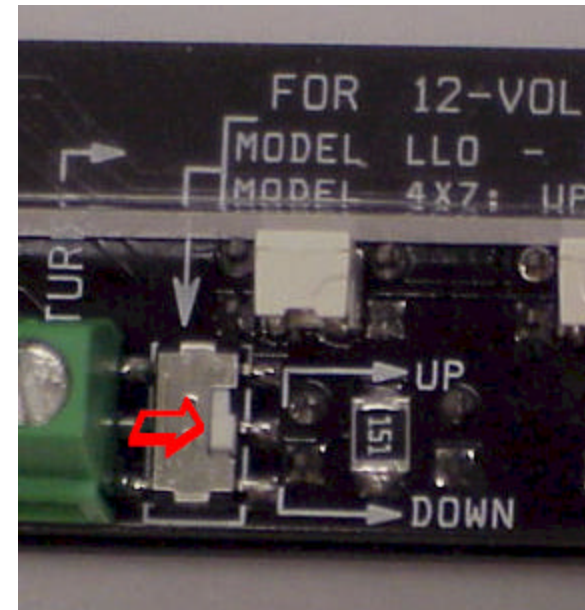


Tap-splice connectors are provided with the ASAP to allow for a solderless tap connection of the turn signal wires to the motorcycle's existing turn signal wiring. These solderless connectors may also be used to splice two wires together.

Be sure the selector switch in the UP position for turn signal usage (See Figure 3 and Photo 2.)



**Photo 1: Terminal Connector Block**



**Photo 2: Slide Switch**

## Final Installation Details

Tighten all wires securely. Dress the wires so as not to put wire insulation in danger of being abraded due to vibration, contact against sharp edges, interference with moving parts (e.g. chains, shock absorbers) or contact with hot exhaust system components. Mounting of the ASAP and its acrylic license light should be such that it does not come into contact with hot exhaust components which could melt the acrylic or overheat the electronics.

A section of heat shrinkable tubing is supplied to aid in dressing the wires. A hairdryer can be used to shrink the tubing around your wiring.

Before operating the motorcycle, be sure that all the motorcycle's lighting systems are operating properly.

**ALWAYS CHECK YOUR MOTORCYCLE LIGHTING FOR PROPER OPERATION BEFORE ANY RIDE.**

Installation questions can be addressed to “tech-support@CuLayer.com”.

## TROUBLESHOOTING

All ASAP tail lights are tested prior to shipping. If your Model ASAP 4X7 Tail Light exhibits problems, please check the following before contacting technical support:

- 1) If no LEDs light check that you have a good connection between the “GROUND” wire from the ASAP terminal block and the metal frame of the motorcycle.
- 2) If no LEDs light after checking the ground wire and you are using the ASAP in conjunction with your original lighting check to make sure that your original tail lamp is lit. With a DC voltmeter or an



inexpensive automotive test light, check that there is 12-volt power at the ASAP terminal block TAIL contact, and if not there then at the splice.

- 3) If the brake LEDES are always on, apply the motorcycle brakes and check for the tail light LEDs to come on. If they do the TAIL and BRAKE wires are likely reversed. Exchange the position of the two wires at the ASAP terminal block.
- 4) If the brake LEDES are never on, apply the motorcycle brakes and with a DC voltmeter or an inexpensive automotive test light, check that there is 12-volt power at the ASAP terminal block BRAKE contact and if not there then at the splice.
- 5) If the turn signal flash rate seems much faster than normal, the motorcycle's turn signal relay is probably trying to indicate a burned out turn signal lamp bulb. This is likely to occur if the ASAP is to be the only turn signal indicator implemented on the motorcycle. The very low current draw of the ASAP will cause some turn signal relay flashers to flash at twice the normal rate as they are attempting to indicate to the operator what they believe to be a burned-out incandescent turn signal bulb. A relay substitution or supplemental load would be required to correct the fast rate flashing.

Technical problems may be addressed to “tech-support@CuLayer.com”.

## **MAINTENANCE OF YOUR EDGE-LIT ACRYLIC LICENSE PLATE SHIELD**

Cleaning the Edge-Lit acrylic sheet must be done very carefully, since any scratch on the sheet will be illuminated when the panel is lit. Regular maintenance involves cleaning the surface of the sheet with a solution of water and mild household detergent. A soft, grit-free cloth, sponge or chamois may be used, but only as a means of carrying the water-and-soap solution to the sheet. Do not use hard, rough cloths that will scratch the acrylic sheet surface. Blot dry with a clean, damp chamois. Do not rub. At all times, the cloth or chamois should be kept free of grit by frequently rinsing in clean water.

If, after washing, the acrylic sheet surface shows minor scratches, most can be removed or reduced by application of polish. To apply polish, use a small pad of soft cotton flannel dampened with water. Rub the sheet in a back-and-forth motion (or use a circular motion). When the scratches are removed, remove the polish with a clean, soft cloth.

Never clean the license plate shield using abrasive powder products or solvents (e.g., acetone, trichloroethylene.)