

# BIG CEE ENGINEERING

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## **Auxiliary Lights**

These lights are for off-road use only; they are not DOT approved. Use on public streets at your own discretion.

### *Mounting*

The auxiliary lights are designed to be mounted on aluminum handguards. The metal bar included in the hardware package is a drill guide; clamp it in position, and drill through the handguards with a #19 drill bit. Remove the drill guide, and tap the holes with an M5 x 0.8 tap. Use the longer button head screws to mount the lights to the handguards. Do not overtighten the screws against the rubber grommets; be sure to use Loctite to keep the screws from loosening.



Or, if you wish to mount the lights to thinner material, you can use the drill guide, and then drill out the holes with a 5mm or #8 drill. Use the appropriate length button head screws, and the washers and nuts.

### *Wiring*

The sockets are not grounded within the housing, so the wires can be connected without regard to polarity. One wire from each light goes to ground, and the other wire goes to a 12V supply. The 35W bulbs draw nearly 3 amps each, so power the lights with either a heavy-duty switch or use a relay. Use at least 18-gauge wire for the connections, and put a fuse close to the battery or main power feed.

One useful way to wire the lights is to use a single-pole, double-throw (SPDT) switch with a center off position. Use in conjunction with a relay, and wire as shown in the attached diagram. When the switch is in the center position, the lights are off. One “on” position turns the lights on directly, and the other one turns them on when the high-beam is on. This makes the lights easy to use on public roads.

### *Aiming*

The easiest way to aim the lights is by shining them on a vertical surface like a garage door. If possible, put the bike up on a stand so it is vertical and the handlebars are straight. Pick a starting aim point, and test ride the bike to see how the light pattern looks on the road. One setup that works well is to aim the auxiliary lights slightly below and on either side of the high beam; this fills in the area in front of the bike when the high beam is on. Adjust the aim points until you find the configuration that suits you best. Note that the screws must be loosened before the lights can be adjusted.

### *Bulb replacement*

Replacing the bulbs is easiest if the lights are removed from the bike (just remove the single pivot screw) and held with the front end down. Remove the four screws, and take off the cover. Grasp the socket with one hand, and pull the bulb off with the other. Plug the new bulb into the socket.

Stack an O-ring, the lens, and another O-ring into the front cover. Place the last O-ring on the rear of the bulb flange. Lower the bulb into the lamp cover, on top of the lens and O-rings. Now, move the whole assembly up against the lamp flange. Be sure that the O-ring behind the lamp seats evenly all around the lamp, and does not get pinched. Start two screws and gently tighten them to begin compressing the O-rings. Start the other two screws, and tighten all of them down evenly until the cover is fully seated.

Note that the bottom of each lamp has either one or two dimples in the flange, and matching dimples in the cover. The corners on the flange and cover are machined as an assembly, so you will get the best alignment if you keep the matching dimples together. However, the covers will fit either lamp at any orientation.

Any 2", 12V MR-16 halogen bulb will work in these lamps. A tight spot (10-12 degrees) works best on a motorcycle. 20 W spot bulbs are usually easy to find at hardware stores, but 35 W spots are somewhat rare. Visit [bigcee.com](http://bigcee.com) for sources of replacement bulbs.

The fine print: I will gladly replace any parts that are defective through manufacture. However, because of the wide variety of riding styles and trail conditions that these parts will encounter, I cannot guarantee their survivability in all impacts.