

## Installation Instructions

### Step 1: Design Layout:

To maximize performance and make installing your lighting system as easy as possible, it is always a good idea to plan out where each fixture will be installed and how the main line will get to them. Here are some important things to consider when laying out your lighting system:

- a. Limit 12-2 main wire runs to 150 feet or less for best performance. If the run will be longer than 150 feet, upgrade wire gauge to 10-2 (up to 250') or 8-2 (up to 350') or if using a high quality multi tap (11-15v) transformer, like Highpoint Deck Lighting's HP300T, a higher voltage circuit can be used to help carry enough load along longer runs of wire.
- b. Do not exceed maximum wattage allowed by the transformer to be used on any run. The wattage of the run can be determined by adding up the total number of lights on the run and multiplying this number by the wattage of bulbs being used. I.e. 9 Hp-591p's x 11 watts each equals 99 watts.
- c. Keep your run (or runs) in series. One fixture after another on one continuous run. Avoid branching off your main run for best performance.

### Step 2: Transformer Installation:

Typically, the transformer will simply attach to the side of the house the deck is on and plugs into the existing GFI outlet. If your transformer is equipped with a photo cell for dusk to dawn operation, be sure the photo cell is not directly under a wall sconce attached to the house's exterior door. If the wall sconce is bright enough, it could turn your deck lighting system off.

Note: Don't plug in or set the timer (if transformer is equipped with one) on the transformer until all the lighting fixtures are installed.

### Step 3: Main Run(s) Installation:

Start by drilling a 3/8" hole(s) through the deck directly under the transformer. Next, install a long enough length of 12-2 wire to reach your first lighting fixture into the transformer. One wire goes to the comm output on the transformer and the other one goes to the hot output on the transformer. Run the 12-2 main wire through the decking and along the underside of the framing to the first lighting fixture. For the safety of your wire, attach the wire to the underside of the deck with insulated cable tacks. Wire left exposed along the ground is susceptible to mice and such chewing on the wires.

### Step 4: Concealing the Main Wire Run:

This is where a little creativity and thought is needed. Ideally, we want most or all of the wires for your lighting system to be concealed. This can be accomplished in

a variety of ways and greatly depends on the type of railing system being used. Here is one common way that should work on most projects:

- a. Start by bringing main wire back up from under the deck. Usually it can tuck in between the house and the first railing post or if you are using a composite post sleeve, the wire can be tucked between the sleeve and the wood support post. This may require a 3/8" groove being datoed or routed out up the side of the wood post.
- b. Once up, we want to run the wire through the railing system from post to post, light to light. Again, this method will vary depending on the railing system being used. Here are a few tips:

\*If railing is made of wood or solid composite, dato or route out a 3/8"-1/2" groove along the top of the support rail to tuck your main wire in, using the railing top cap to conceal the wire. Take care not to hit the wire with the screws used to secure the top cap.

\*Many of today's composite, aluminum and vinyl railing systems are hollow and wire can be easy and quickly run through them.

\*If your railing is solid like log or wrought iron a little creativity may be needed. I've seen many fun and interesting ways to hide wire like:

-Running wire up each post from under the deck and conceal it in a 1/2" copper or aluminum railing spindle or cover it over with a trim piece that artistically may dress the post up. Basically, what I am saying is there is no one and only way to conceal wire and your specific project may require a little ingenuity to get it done and that is what makes a "custom deck" custom!

Step 5: Basic Highpoint Deck Lighting railing fixture installation (detailed instructions available at [www.hpdlighting.com](http://www.hpdlighting.com)):

Determine where you want to mount the fixture on your railing post and drill out approximately a 1 1/2" wide X 1 1/2" deep hole. Next, drill 1/2" hole(s) down the post the top rail and feed the main run wire through it to the 1 1/2" hole. Stub main run wire out of hole approximately 3-4 inches. Cut lead wire on fixture back to about the same 3-4 inch length. Next, strip rubber coating off of each wire exposing a minimum of 5/8" of the copper. Take one wire from the fixture and the main run(s) and connect securely with a wire nut then repeat with the other wire. Now, tuck the wires and wire nut into the hole and attach the fixture back plate, covering over the 1 1/2" hole, with the two ACQ compliant brass screws that come with the fixture. Screws should be snug but not so tight that it compresses the back plate. Finally, slide the decorative face plate on and you are finished.

Now let's install a Highpoint Deck Lighting recessed step light (detailed instructions available at [www.hpdlighting.com](http://www.hpdlighting.com)).

First, decide where the fixture is going to be installed. Make a mark with a pencil indicating the center of the 3" hole you will be drilling to install the back box. Once you have your layout bore out a 3" hole using a HP-990A bore bit. This hole should be drilled no less than 1 ¼" deep. Also, be sure the area you are drilling is free of nails or screws otherwise the bore bit will be destroyed. Next, drill a ½" hole all the way through the center of the 3" hole to allow for wiring. Next, run wire through the ½" hole and insert 3" round back box. The back box can be secured using the two ACQ compliant screws that come with the fixture by fastening through the two slots in the back of the box or through the two tow nail slots on the side of the box.

Next, go under the deck and attach fixture's wires to the main run. Use the same method as the railing fixture only using HP-953a (King silicone wire nuts) instead of the standard wire nuts. Finally, hand-tighten face plates to the back box using the 2 color matching screws provided with the fixture. Do not over tighten or the real glass face plate will crack. It is that easy!

#### Step 6:

Now that your lights are wired up go ahead and plug in your transformer and flip the circuit breaker on and see how they look. Each fixture should have the same brightness. If a fixture toward the end of your run looks a little dim, you may need to tap up to a higher voltage on your transformer (if available) or your run may be too long or over wattage for your transformer. If you are over wattage you will need to upgrade the transformer. If the run is too long and you are getting voltage drop, you can attach another main run from the transformer back to the last light on the run. This will effectually cut the overall run length in half by creating a full circular circuit.

If all is well, then go ahead and set the timer (if your transformer is equipped with one) and enjoy.

Well, that is an overview of what deck lighting is and how to install them. Always remember that deck lighting is about style and ambiance and overall enjoyment of your outdoor living environment. For further ideas and PDF downloadable instructions on how to install rail, step, wall, landscape and hanging lanterns please visit [www.hpdlighting.com](http://www.hpdlighting.com).