

Low-Voltage Outdoor Lighting the Easy Way

Low-voltage light kits make it possible to wire your yard for dramatic lighting in a weekend or less. It's so easy it's shocking.

By Joe Provey

Photography by James Westman

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Low-voltage lighting extends the use of your yard into the night, making it safer and more attractive.

Low-voltage outdoor lighting got its start in the early 1950s when Bill Locklin, an electrical contractor in Redlands, Calif., and a PM reader, was asked by a client to put up some outdoor lights.

In those days, outdoor lighting was exclusively 120 volts and the fixtures were expensive. But Locklin had an idea for something different. He fashioned some 12-volt fixtures from fruit juice cans, tractor headlamps and mayonnaise jars (as the lenses), and powered the system with car batteries. Locklin didn't know that his client (publisher and philanthropist Walter Annenberg) was expecting some special guests, President Dwight D. Eisenhower and first lady Mamie. The Eisenhowers were so impressed by the lighting system they ordered a similar one for their vacation retreat. Locklin and his company, Nightscaping, were off and running. In fact, he's still in business (www.nightscaping.com).

The acceptance of outdoor lighting by the average homeowner, however, has been hampered by flimsy kits that break down soon after they are installed and the marginal performance of low-voltage solar-powered outdoor lights. In recent years, though, there has been steady improvement. Better-quality fixtures at lower costs, longer-lasting bulbs and easier installation techniques are just some of the reasons that low-voltage lighting is catching on.

Another change that has helped is an industrywide shift in design philosophy. Chris Primous, product manager for Progress Lighting (www.progresslighting.com), says that in the past only the light was meant to be visible, while the fixtures were hidden or unobtrusive. "Today many fixtures are made to be seen," Primous says. "They can be playful. For example, there are turtle fixtures with Tiffany glass shells and flower fixtures with leaves that blow in the wind."

Locklin, on the other hand, advises homeowners to put the emphasis on light quality. An attractive, though dim, light doesn't serve its purpose, he says, adding "you shouldn't have to strike a match to be sure it's on."

Regardless of the design, installing landscape lighting enables a homeowner to enjoy his yard at night—entertaining on the deck or viewing it from the family room. A lighting kit also increases safety by making darkened steps and paths more visible and, when equipped with motion sensors, it can improve a home's security by revealing intruders.

Best of all, many installations can be handled by a novice do-it-yourself homeowner. For \$300 to \$500, you can install the system we show: six to eight path lights, a wall washer, a floodlight, a transformer, a 12-volt cable and wire connectors.

TIPS FOR LOW-VOLTAGE SUCCESS

Homeowners can start modestly by trying out their lighting ideas with a flashlight. Pick one thing you want to illuminate, then hold the flashlight in various positions to achieve the desired effect. "You'd be amazed at what you can do with a two-cell

flashlight," Locklin says.

In some respects, installing landscape lighting is no different than other landscape design issues in that you design with the future in mind. "Install conduit under driveways or patios before paving or bricking, and have the ground-fault circuit-interrupter (GFCI) receptacles installed before getting started," advises Randall Whitehead, a landscape lighting designer in San Francisco. He adds, "Buy fixtures with more wattage capacity than you need, then increase wattage in the future by replacing smaller wattage lamps with higher-wattage ones [within the capacity of the transformer] as the plants mature." To avoid a monotonous-looking system, Whitehead also advises mixing fixture types, light patterns and fixture spacing.

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STEP BY STEP

ONE LIGHT AFTER ANOTHER

Plan the system first. Then build it based on its watts.

Every low-voltage light system starts with a plan drawn to scale, even if you're not going to install the system all at one time. You needn't be a landscape architect. Make a sketch of the area you want to light using a scale of 1/8 in. equals 1 ft., advises John Grosche, marketing manager for Intermatic Malibu (www.intermatic.com). Don't forget to draw the location of your house's exterior outlet, garden beds, paths, trees, deck or patio, and any architectural features that you want to be focal points or that you want to light for safety.

Add up the wattages of the fixtures, then buy a transformer with slightly larger wattage than the total power required. It's just as important to match the size of the cable to the transformer. Intermatic recommends the following based on UL requirements: 18-ga. wire, 120 watts maximum; 16-ga., 156 watts; 14-ga., 216 watts; 12-ga., 300 watts. Remember, there's no harm done by burying slightly larger cable than you need at present. Again, it's better to anticipate what the future landscape lighting needs may be. The system shown uses 12-ga. cable.

Also, it's best to split one long run into two or three shorter ones. Design the system so that each run of lights has about the same wattage.

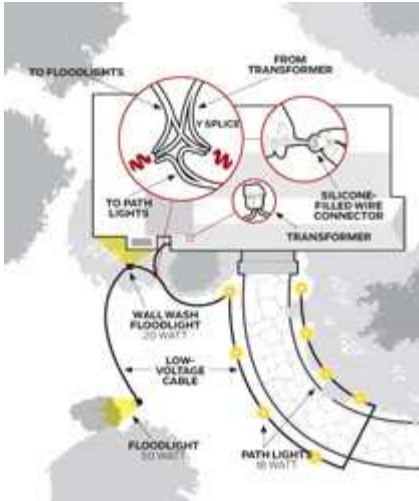
Begin by splitting apart the two low-voltage cables. Make a slit with a utility knife, then gently pull the cables apart to produce two 2-in.-long pieces. Use wire strippers to expose 1/2 to 5/8 in. of stranded copper conductor on each cable (length depends on the manufacturer's instructions), then place the stripped end under the left side of the terminal and tighten the screw **(1)**. Do not trap any of the insulation under the terminal screw.

Next, feed out cable into the yard and make splices as shown, pairing like wires together (ridged cables together, smooth cables together). Use only a silicone-filled wire connector rated for burial because it keeps out water and dirt. (We used Ideal UnderGround wire connectors, www.idealindustries.com.) Bury the splice in a 6-in.-deep slit.

Next, join the first fixture to the cable using the press-fit electrical connectors attached to the fixture's cable **(2)**. The first fixture is placed at least 10 ft. from the transformer to allow for some voltage drop. Place it too close to the transformer and you risk premature bulb burnout.

Install the bulbs in the fixture **(3)**, and stand each fixture by making a hole with a wooden stake, then sliding the fixture partially into the hole **(4)**. Do not bury the cable.

Once all the fixtures are standing, test the system. Plug the transformer into a GFCI outlet equipped with a weather-protection hood, and set the timer **(5)**. Note that the transformer must hang at least 12 in. above grade. If all the fixtures light properly, tuck the cable into a 3-in.-deep slit **(6)**. If the fixtures don't light, check the connections and bulbs.



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(1)

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Illustration by Flying-Chilli.com



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(2)



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(3)



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(4)



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(5)



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(6)

MORE LIGHT IDEAS



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This unobtrusive 3.5 x 5-in. 20-watt fixture looks like a stone. It's a great way to spread light across a path, low garden beds or lawn.

Price \$24 (Malibu Model NA320)



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This Arts & Crafts post light is handcrafted from copper with a preaged oxide finish.

Price (List) \$523; Retail \$300 to \$380 (Hadco Lighting GADL61-AC)

This submersible 20-watt fixture comes with 20 ft. of prewired cable and the same quick connectors as above-the-waterline fixtures.

Price \$36 (Malibu Model CL115)



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