

Kitchen and Bath

Low-Profile Undercabinet Lighting

by Michael Poster

A well-lit work surface is an important issue in kitchen design. Since our company is responsible for both the kitchen design and the cabinet construction, the lighting layout is typically in our court. We've experimented with a number of undercabinet lighting strategies over the years and have settled on low-voltage halogen lighting as our preferred system.

The light output from halogen fixtures is superior to either fluorescent strip lighting or low-voltage incandescent lighting. Halogen lamps produce a bright white light much like sunlight that is easy on the eyes and renders colors well.

We use "hockey puck"-style halogen fixtures, manufactured by Hera Lighting Inc. (6659 Peachtree Industrial Blvd., Suite M, Norcross, GA 30092; 800/336-4372). These fixtures have a thin ($\frac{5}{8}$ inch) profile that allows us to conceal them in the recessed bottoms of our overhead cabinets (see Figure 1).

Puck Layout

In a typical kitchen installation, we space the pucks 18 to 20 inches apart and use 20-watt lamps in each fixture. To help keep the costs down, we often place the lights only in prime work areas (you can expect to pay \$30 to \$35 dollar per fixture).

Low-voltage fixtures require an electronic or magnetic transformer to "step down" the 110 line voltage. We prefer electronic transformers. They're small, they run cool, and they're quiet, which allows us to conceal them under the cabinet. Magnetic transformers are large, noisy, and produce heat, making them suitable only when the transformer can be installed in a remote location.

Switching the light fixtures is

straightforward. The transformer can be wired directly to a wall switch or plugged into a switched outlet.

Out of Sight

The key to a successful installation is proper placement of the pucks, connecting wires, and transformer. It's important to make the installation as unobtrusive as possible, yet still provide access for replacing failed components.

To conceal the "guts" of the lighting system, we make a false bottom panel that fits in the underside recess of the overhead cabinet (Figure 2). We cut



Figure 2. The pucks mount neatly in holes in a false bottom panel, which is attached to cleats in the cabinet's bottom recess. The panel removes easily for maintenance.

this access panel from $\frac{1}{2}$ -inch or $\frac{3}{4}$ -inch plywood that matches the existing cabinets, and fasten it to cleats attached to the underside of the cabinet. The space between the panel and the underside of the cabinet provides a raceway for the connecting wires and room for the transformer and recessed puck lights.



Figure 1. For undercabinet lighting, the author prefers low-voltage puck lights, which he installs every 18 to 20 inches.



Figure 3. When there is not enough clearance in the cabinet's bottom recess, the transformer can be mounted inside or on top of the cabinet. Transformers can either be hard-wired or plugged into a switched receptacle, as shown here.

Before installing the panel, we lay out the pucks and bore 2¹/₈-inch holes using a portable power drill or drill-press mounted hole saw. We also bore 1/2-inch holes in the cabinet sides (within the hidden area) to route the small-diameter wires connecting the fixtures.

When the cavity between the cabinet bottom and the access panel is 1¹/₂ inches deep or more, the electronic transformer we use can be mounted within the cavity. The Hera transformers remain relatively cool and require only modest clearances (but consult the manufacturer's installation instructions before placing a transformer within a confined space).

When there isn't enough room for the transformer, we mount it on the back of a face-frame mullion or on the underside of the cabinet top. We then carefully route the low-voltage wires inside the cabinet to out-of-the-way corners and secure them with phone wire staples.

Putting the Pieces Together

With the access panels positioned below the cabinets, we fasten the fixtures and transformers to the panels and route the wires through the 1/2-inch holes bored in the cabinet sides. We then lift the panels into place and attach them by screwing down through the cabinet bottom into the access panel. The transformer can either be hard-wired to a wall switch or plugged into a switched outlet inside of or on top of a cabinet (Figure 3).

Shallow Solutions

When the recessed area below the cabinet is not deep enough to house the fixtures and access panel, the puck lights, transformer, and cabling can be surface-mounted to the underside of the cabinet and plugged into the nearest wall receptacle.

For a more attractive installation, the transformer and wiring can be installed on top of the cabinets, or inside the cabinets when a soffit is in the way.

The goal of any undercabinet lighting strategy should be to conceal the wires and transformers. The best-looking job will show only fixture lenses, trim rings, and a brightly lit work surface.

Recessed halogen lighting may be a more expensive approach than you're accustomed to, but we've found many customers who are willing to pay the \$70 to \$90 installed per-fixture cost for a first-class lighting system. ■

Michael Poster **owns and operates Michael Poster Woodworking in Montrose, Pa., and publishes Woodweb, a World Wide Web site for the woodworking Industry at <http://www.woodweb.com>.**