



Dedicated Fixtures for Compact Fluorescents

by Tim Maker

For most people, the term “compact fluorescent lighting” (CF lighting) evokes images of those bulky, retrofit screw-ins — the ones with the built-in ballasts that always seemed out-of-place when screwed into a traditional light fixture. A few years ago those were the only CFs available, but choices have expanded greatly since then. There is now a whole world of hard-wired fixtures specifically designed for CF lamps (in the lighting business, bulbs and tubes are called “lamps”) that consume only a fraction of the energy used by comparable incandescents.

Although a CF fixture costs \$25 to \$50 more than a comparable incandescent fixture, utility rebates may offset the price difference. Some, in fact, will pay the difference between the cost of the incandescent fixture and the cost of the CF fixture. In addition, the annual energy savings (at 8¢ per kilowatt-hour) are \$3.50 per year for a fixture that’s used two hours a day and \$20 per year for one that’s used 12 hours a day. That may be an insignificant savings if you only have one fixture, but with a whole house full of fixtures it can have a big impact on the electric bill.

From an efficiency standpoint, fixtures that are designed for CF lamps make a lot more sense than screw-in retrofits. Efficiency is determined by how well the lamp/ballast combination work together, and CF fixtures are designed with that in mind. Even the spatial relationship between the parts is important. Screw-ins place the lamp right next to the ballast, so the ballast is more likely to overheat. CF fixtures let you put the ballast farther away from the lamp than in a retrofit unit. As a result, the ballast stays cooler and lasts longer.

Fixture Choices

When I performed my first lighting retrofit in the mid-1980s, the lighting



Figure 1. Hard-wired CF fixtures come in a variety of styles. Halo’s recessed downlight (top) and its “Nouveau” surface light (above) are good examples of stylish CF lighting.

catalogs I looked at had at most a five-page section on fluorescents, with only a handful of CF fixtures. That has changed dramatically. Most fixture manufacturers now have specific lines of “energy-saving lighting” in a variety of styles covering almost all types of hard-wired fixtures (see Figure 1). They include ceiling fixtures, recessed downlights, wall sconces, pendants, track lights, chandeliers, and outdoor lighting.

The proliferation of fixtures has come on the heels of improvements in lamp technology. When CF lamps first hit the market, the harsh light they put out discouraged people from installing them in their homes. But lamps have taken great strides since then; in fact lamps are now available with color temperatures that nearly match that of a comparable incandescent. Today, I would be hard pressed to say whether a given desk lamp had an

incandescent or a CF installed in it.

Specialized Fixtures

CF fixtures and lamps are rated for the minimum temperature at which the ballast is sure to start them. A typical residential indoor fixture may be able to start in temperatures as low as 30°F. Others have a “cold weather ballast” option that extends the range downward. Fixtures intended for outdoor use are typically rated for 25°F, 0°F, or -20°F.

Brownlee Lighting (3071-K North Orange Blossom Trail, Orlando, FL 32804; 407/297-3677) has a line of CF wall fixtures that comply with the Americans with Disabilities Act (ADA) standards for public and commercial spaces. Those standards require that no object, including light fixtures, may project more than 4 inches into walkways or corridors in a height band from 27 inches to 80 inches above the floor.

You can also get CF fixtures for emergency lighting. Halo Lighting (400 Busse Rd., Elk Grove Village, IL 60007; 708/956-8400) has commercial CF recessed ceiling fixtures with an emergency battery backup. The fixtures look and function like conventional recessed fixtures, but use the battery backup during power outages. Brownlee also has a line of wall sconces with special ballasts that charge a battery to supply emergency lighting for up to 90 minutes (Figure 2).



Figure 2. Brownlee’s emergency light CF wall sconces look just like a regular sconce.

Where to Get Help

Electric utilities and lighting designers are the best place for builders to get information on CF products. Most utilities now have "new construction" programs that actively promote high-efficiency lighting for residential and commercial buildings. The utilities serve as technical clearinghouses, providing information on which CF fixtures are available locally, and which ones customers have been most satisfied with.

These utility programs may also provide incentives for builders to install CF and other high-efficiency light fixtures. For example, the major Vermont utilities give a \$30 rebate for each interior or outdoor CF fixture, up to a maximum number per house. Some offer additional rebates for measures like undercabinet fluorescents.

Product Improvements

Like any new technology, compact fluorescent lighting has had its share of start-up problems. Not only did the early lamps give off a harsh, bluish light, but their electromagnetic ballasts took several seconds to start up (sometimes with flickering), which prevented the lamp from reaching full brightness right away. And because the ballasts ran hot, they tended to be inefficient.

But there have been major improvements in lamp and ballast technology in recent years. The light coming from many of today's compact fluorescents is practically indistinguishable from that given off by a traditional incandescent bulb. Efficiency and starting times are improving, too — thanks largely to the new electronic ballasts for CFs.

Right now, only a few residential fixtures have electronic ballasts, but customer demand is sure to make that number grow. Electronic ballasts run cooler, last longer, are more efficient, and can start instantly. Some are even dimmable. And though most dimmable ballasts are sold in the commercial market, dimmable residential fixtures are due to hit the market this year. ■

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