

OUTDOOR LIGHTING

The LED Revolution

Improved LED fixtures are flooding the outdoor lighting market. However, conventional fixtures remain less expensive, and experts say using the latest LED bulbs in those conventional models produces equally good results.

By Drew Vass

Whether it's porch lights to welcome you home after sunset or ground-level lights that give your home's landscape a dramatic nighttime flair, you'll find more choices of outdoor lighting fixtures than ever before.

Federal regulations require that making or importing conventional 40- and 60-watt incandescent bulbs end, because these bulbs' efficiency, which is measured in lumens per watt, doesn't meet new energy-efficiency standards. (A *lumen* is a measure of the visible light that a source emits.) Similar restrictions were enacted in 2012 and 2013 for 100-watt bulbs and 75-watt bulbs, respectively.

These deadlines were known for years, so fixture manufacturers developed models that integrate the electronic components of energy-efficient LEDs into their designs. Thus, integrated LED fixtures are easier to find than ever before. A few manufacturers went even more high-tech by marrying wireless controls with their models.

Although manufacturers made the components of the newest integrated LED fixtures replaceable—to eliminate the need and cost to replace a failed fixture after years of use—the task isn't nearly as easy



as screwing in a light bulb.

Meanwhile, outdoor lighting fixtures that accommodate incandescent light bulbs won't disappear even though the bulbs will, because those same fixtures also accept more-efficient CFL and LED bulbs.

PRICE BLUES. Our research found that, among major manufacturers, integrated LED fixtures now make up 25 percent of their products. That compares with an estimated 5 percent to 10 percent of the market at the turn of the decade. Unfortunately, expansion of their inte-

grated LED-fixture lines didn't prompt manufacturers to drop prices much.

Based on our calculations, integrated LED fixtures across all outdoor lighting categories remain about 45 percent more expensive on average than are their conventional counterparts, and manufacturers say consumers shouldn't expect prices to drop in the foreseeable future.

However, three contractors remind us that the premium that's paid for integrated low-voltage LED fixtures over conventional versions is offset by savings in labor and wiring costs. Integrated LED fixtures operate at lower watt-

ages and include hardware that regulates the amount of electricity that they receive and, thus, require smaller, less expensive transformers. Consequently, if you're installing outdoor lighting for the first time, you'll need less wiring than you would if you were to install a conventional fixture. (Unlike incandescent fixtures, integrated LED fixtures can be daisy-chained along a single strand of wire. Incandescent fixtures require additional wiring loops, depending on distances and the number of attached fixtures.) Further, integrated LED fixtures take less time to install,

✓ Best Buys in Outdoor Lighting

Best Buy Categories

- [P]—Premium selection
- [M]—Midrange selection
- [E]—Economy selection



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Best Buys in outdoor lighting were selected based on durability, ease of installation, warranty and design.

Outdoor lighting fixtures that are designed primarily for security weren't evaluated. Consumers Digest covers those products in a separate report.

Entry lighting refers to wall- and ceiling-mounted fixtures. *Utility lighting* includes wall lights, floodlights, step lights and deck lights.

Best Buys for entry and post-mounted outdoor lighting are for a series of models. The MSRP and features represent the model in the series that has the best value.

Unless otherwise noted, all entry and post-mounted and path/landscape Best Buys permit the use of CFL, incandescent or LED bulbs.

All utility Best Buys are integrated LED fixtures that have replaceable light engines, which means that you can replace the unit that contains the bulk of the electronics and the LED chips rather than the entire fixture.

All outdoor lighting fixtures are designed to be weather/water-resistant and are suitable for damp locations, that is, the light is covered from direct contact from precipitation. All utility Best Buys are rated for wet locations as well, which



means that they can be mounted in places where they come in direct contact with water, although not underwater.

Socket type refers to the fixture's socket, which is matched to a bulb's base. Maximum power refers to the maximum allowable bulb wattage that can be used in a fixture. *Recessed* means that the light is designed to be mounted into a wall or other surface.

Best Price is a reflection of the lowest retail price that was available at press time and is subject to change.

ENTRY & POST-MOUNTED

[P] **MSRP: \$450 (17-inch);**

Best Price: \$450
>> The series' handmade, all-copper construction provides the highest

quality construction of any entry or post-mounted outdoor lighting that we found. This series also includes the only handmade models that we found that have a lifetime fixture warranty. Further, this series is the only one that we found that can be powered by natural gas or propane as well as electricity, and for the same price.

Features:

- * Dimensions: 17 in. (h) x 12 in. (w) x 10-1/4 in. (d)
- * Socket type: Medium
- * Maximum power: 100 watts
- * Finish: Antiqued copper
- * Warranty: Lifetime fixture; 1 yr. electrical components

[M]

MSRP: \$297 (9017MB/BB);
Best Price: \$159

>> The series includes the least expensive hand-forged, wrought-iron fixtures that we found. This design gives the fixtures a sturdier construction than what you'd find on other models that are in this price range, which typically are made of aluminum or steel. This series also includes the least expensive hand-painted fixtures that we found.

Features:

- * Dimensions: 11 in. (h) x 11-1/2 in. (w) x 11-1/2 in. (d)

- * Socket type: Candelabra (two)
- * Maximum power: 40 watts
- * Finishes: Burnished bronze (with clear hammered glass), black (with clear seedy glass)
- * Warranty: 1 yr.

[E]

MSRP: \$99 (1490AM);
Best Price: \$78

>> No other series of entry or post-mounted outdoor lighting that's in this price range has a longer warranty than the does. This series also is the only economy series that we found that includes interchangeable clear seedy glass and etched seedy glass.

Features:

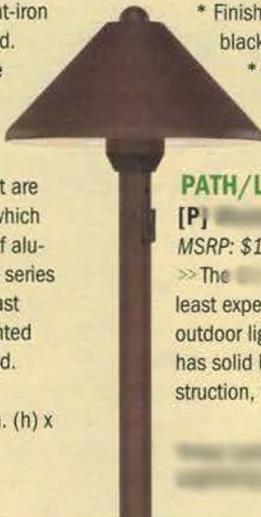
- * Dimensions: 11 in. (h) x 6 in. (w) x 7 in. (d)
- * Socket type: Medium
- * Maximum power: 75 watts
- * Finishes: Autumn (brown), black
- * Warranty: 12 yrs. electrical components, 2 yrs. finish

PATH/LANDSCAPE

[P]

MSRP: \$135; Best Price: \$135

>> The is the least expensive path/landscape outdoor lighting that we found that has solid brass and copper construction, which doesn't require



contractors say, and would cost less for an electrician to install than would incandescent fixtures.

Matthew Broyles, who owns outdoor lighting contractor Firefly Lighting, adds that his company replaced 120-volt, 175-watt conventional fixtures with 12-volt, 22-watt integrated LED fixtures "without sacrificing light." Based on those wattage differences, the integrated LED fixtures would cost 87 percent less to operate than would equivalent conventional fixtures. If your landscape lighting system consisted of 10 fixtures that were on 4 hours per

night, we calculate that you'd save \$271 annually. However, calculating the cost of the fixtures alone, not factoring in the labor and wiring costs, a 10-fixture, integrated LED system would cost you about \$400 more than would a 10-fixture, low-voltage conventional system.

As for savings that you glean down the road from replacing components in the newest integrated LED fixtures rather than replacing the entire fixture: Unless you're particularly handy with electronics, manufacturers say, you have to pay an electrician to remove the electronic components, including the light

engine, and ship it—at your expense—to the manufacturer for repair. You then have to pay again to reinstall the fixture. That will set you back \$125–\$220, electricians tell us.

MOOD SETTERS. Because integrated LED fixtures contain electronic circuitry, they adapt more easily to other technologies, such as remote control and wireless access, than do conventional fixtures.

Manufacturer FX Luminaire in January 2013 added wireless control to its integrated LED fixtures. The control

any finish. Finishes typically fade or fail over time on fixtures that are made of plastic or other materials. This model also has a longer warranty than do other models.

Features:

- * Dimensions: 17 in. (h) x 5 in. (w) x 5 in. (d)
- * Socket type: Medium
- * Maximum power: 18 watts
- * Finish: None
- * Warranty: Lifetime

[M]

MSRP: \$82; Best Price: \$82

>> The is the new name of a repeat Best Buy selection. This model is the only path outdoor lighting that we found that includes an adjustable beam that can be narrowed or widened via a slide lever, and it costs \$32 less than it did previously. This model also has 23 more finish options than the closest competitor has.

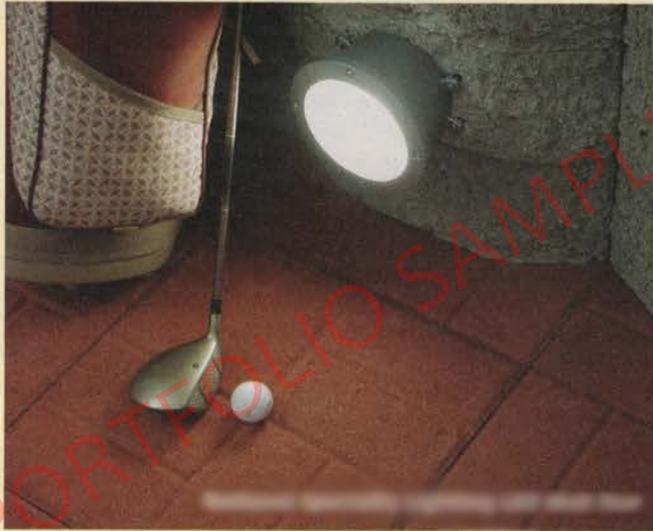
Features:

- * Dimensions: 18 in. (h) x 6 in. (w) x 3 in. (d)
- * Socket type: G4/GU5.3
- * Maximum power: 20 watts
- * Finishes: 26
- * Warranty: 1 yr.

[E]

MSRP: \$40; Best Price: \$40

>> The which is sold exclusively at The Home Depot, produces more light output, 600 lumens of light, than any other fixture that's in this price range. This



low-voltage (12-volt) integrated LED fixture consumes half as much energy, yet produces more light, than most high-voltage (120-volt) 40-watt halogen bulbs do.

Features:

- * Dimensions: 12-3/4 in. (h) x 3 in. (w) x 6-1/2 in. (d)
- * Socket type: Fixed LED
- * Maximum power: 18 watts
- * Finish: Black
- * Warranty: 1 yr.

UTILITY

[P]

MSRP: \$177; Best Price: \$129

>> The has the best combination of features among utility outdoor lighting. This model lends itself to a wider range of uses than does any other model, including area lighting, wall illumination and

overhead lighting. You can't buy a less expensive model that has the warranty that this model has. This model's design allows it to be mounted in an upward position in damp locations and within 4 feet of the ground. However, if it's mounted in a wet location, this model requires a downward position.

Features:

- * Dimensions: 2-1/8 in. (h) x 4-3/4 in. (w) x 11 in. (d)
- * Maximum power: 10.0 watts
- * Finishes: Bronze, white
- * Warranty: 5 yrs.

[M]

MSRP: \$80; Best Price: \$57

>> The is the most versatile fixture that's in this price range. It also is the only midrange

utility outdoor lighting that we found that has the capability to be mounted overhead and surface- or recess-mounted in walls or steps. This model also has the broadest combination of design options of any midrange model: It has louvered, prism and scoop cover-design options in four finishes.

Features:

- * Dimensions: 6-3/8 in. (h) x 6-3/8 in. (w) x 2-1/2 in. (d) recessed
- * Maximum power: 5.2 watts
- * Finishes: Aluminum (gray), black, bronze, white
- * Warranty: 2 yrs.

[E]

MSRP: \$40; Best Price: \$37

>> The has the most mounting versatility among utility outdoor lighting that's in this price range. It's capable of being mounted in any position and virtually any location, including in-wall, in-floor, in-step and in-ground. No other economy model has a longer warranty or more finish options than this model has.

Features:

- * Dimensions: 2 in. (h) x 2 in. (h) x 3-1/4 in. (d) recessed
- * Maximum power: 0.5 watts
- * Finishes: Aluminum (gray), black, bronze, stainless steel, white
- * Warranty: 2 yrs.

For more information about the above Best Buys, contact the manufacturers directly. See page 71.

lets you remotely dim or brighten a range of outdoor lights either on demand or on a programmed schedule.

The system consists of a Wi-Fi module that attaches to the company's Luxor ZD series of controllers, both of which can be installed outdoors or indoors by using a separate mount accessory. A light assignment module (LAM) that you temporarily plug into your smartphone or tablet computer allows you to organize your fixtures into groups, and you can control the fixtures individually or in groups by using a free Apple iOS or Google Android mobile application.

FX Luminaire's system isn't for the light-walleted: The Wi-Fi module (\$199), LAM (\$99) and mount (\$19) cost a total of \$317. Unless you already own a Luxor ZD controller, you'll have to spend another \$899 for the least expensive of those. Plus, the least expensive compatible fixture costs \$139.

Meanwhile, Kim Lighting, which is a Hubbell Lighting brand, in April 2013 introduced its LightVault 8 in-grade (in-ground) fixture. Unlike FX Luminaire's approach, no additional hardware is required. LightVault 8 fixtures link directly to your smartphone or tablet and can be activated, deactivated, dimmed and aimed remotely through a free Android or iOS app. All you have to do is pair, or link, each fixture with your mobile device via Bluetooth.

However, Kim Lighting's approach isn't for the budget-conscious consumer either. The least expensive model that has this capability is the LTV83, which starts at \$500. That nets you control over just a single fixture—LightVault 8 wireless features are individual to each fixture.

Two other manufacturers, Designers Fountain and Litman, tell us that they're developing wireless controls for their outdoor lighting fixtures. Neither reveals whether those technologies will be based on Bluetooth or Wi-Fi or require additional components, nor do they suggest a price.

BETTER BULB. Manufacturers that make integrated LED fixtures insist that the fixtures deliver more light output per watt and do a better job at projecting light in the desired direction than do conventional fixtures that can hold



LIGHT STEPS. Low-voltage LED systems for path and landscape lighting cost about the same as conventional systems do when you calculate labor and material costs.

an LED bulb. They also say that, because the electronic components and heat sinking (cooling) mechanisms are integrated into the fixture, integrated LED fixtures do a better job of keeping LEDs cooler than can be achieved in an LED bulb. However, two experts with whom we spoke disagree.

"There was a time, just recently in fact, when integrated LED fixtures made more sense," says Nadarajah Narendran, who is the director of research for the independent Lighting Research Center. "Now that LED technologies have improved, LED [bulbs] are just as good."

Improvements in LED technologies mean that an LED bulb now takes fewer watts to produce the same amount of light as an older LED bulb did, while generating less heat. Consequently, Narendran says, a 5- or 6-watt LED bulb now is "perfectly sufficient" for entry lighting, for example.

When it comes to projecting light, LED bulbs have caught up here, too, Narendran says. LED bulbs now typically are designed to be mounted in

certain directions (up, down, sideways) and project light in different patterns (conical, fanned out, focused). So correctly paired LED bulbs and conventional fixtures project the right type and amount of light in the desired directions and patterns as well as a comparable integrated LED fixture does, he says.

Finally, with regard to total costs, although integrated LED fixtures are more energy-efficient, you'll save more money over a fixture's lifespan by buying a conventional fixture and using an LED bulb. We compared a typical integrated LED fixture that's rated at 40,000 hours of life and the same fixture configured with a conventional LED socket that would use two 20,000-hour LED bulbs over the same lifespan. The integrated LED fixture costs \$173; the version that uses LED bulbs costs \$93, including the bulbs' price. When average national electricity prices are figured in, the total cost to buy and operate the integrated LED fixture over a 40,000-hour lifespan is \$217. The cost of the LED-bulb version is \$144.

Narendran believes that in uses where aesthetics remain a consideration, such as wall-mounted porch lights, the number of integrated LED fixtures that are available will continue to increase. "In every other area, you're going to see folks stick with changeable lamps," he says. Manufacturers tell us that LED fixtures are here to stay.

Regardless of the type of outdoor lighting fixture, two designers tell us that they're salivating over the future of LED outdoor lighting. You could create customized light displays for different seasons and special occasions. "You might have a 'people coming over' scheme and employ more-impressive lighting for those occasions than you would when it's just you pulling into your own driveway," Broyles says, as an example of just one bright idea. ●

Drew Vass is a regular contributor to Consumers Digest. He has written about a wide variety of home-improvement topics that range from home heating systems and replacement windows to kitchen remodeling.



Go to ConsumersDigest.com to learn about emerging technologies that might save you 20 percent for each integrated LED fixture.