

## Avoid Air Leaks with Efficient Recessed Lighting

BY JAMES DULLEY

**Dear Jim:** I've always liked recessed light fixtures, but heard they're leaky and inefficient. Are there any new types of fixtures which are more energy efficient? Are they difficult to install?—  
Mike M.

**Dear Mike:** Recessed lights have been popular for decades, and remain the lighting fixture of choice for overhead lighting. As with any other product in the home, some recessed light fixtures are more energy efficient than others. Efficient options can use 80 percent less electricity than inefficient versions which provide the same amount of light output with practically the same appearance.

Recessed light fixtures are unique because they penetrate and are mounted in the ceiling of a room. From an energy conservation standpoint, this is not an issue when installed in the first floor ceiling of a two-story house. However, if fixtures are installed in the second-story ceiling or the first floor ceiling of a one-story house, a hole is created between a conditioned living area and the open, unconditioned attic area.

Without an efficient design and proper installation, a recessed lighting fixture allows

conditioned air to leak out of the house. This is particularly true during winter when the warmer air inside a home naturally rises to the ceiling. This not only wastes energy, but may create a chilly draft in rooms where cold outdoor air leaks indoors.

There are new energy efficient recessed light fixture designs that meet Energy Star standards. All of these fixtures use fluorescent light sources instead of inefficient incandescent bulbs. This fact alone reduces electricity consumption by 75 percent. The inside surface of the new fixtures is also more reflective than older inefficient versions. Better reflectivity reduces the amount of light



Adjustable eyeball recessed light fixtures are ideal to focus light on a specific object on the wall or floor.

### QUICK TIP

Recessed light fixtures have come a long way. New designs use 80 percent less energy while providing the same light and appearance.

JUNO LIGHTING

trapped and dissipated inside a fixture before ever getting into a room.

For fixtures in ceilings where indoor air leakage seems likely, select a new airtight design with a sealed canister. The sealed airtight recessed fixture canister, when installed properly, forms an airtight seal between the ceiling and the fixture. These types of fixtures are most often used in ceilings beneath an unconditioned attic, but they are also effective for unheated basement ceilings, minimizing drafts between floors.

As a safety note, if you already have recessed lighting fixtures in your home, do not go up into the attic and wrap them with insulation to try to save energy. Wrapping older fixtures with insulation can hold in too much heat, particularly when standard incandescent bulbs are used. These fixtures are not designed to be airtight and the excess heat buildup can become an electrical or fire hazard.

If a recessed light fixture will be installed in a ceiling under an insulated attic floor, select an insulation contact-rated (IC) design. These fixtures are designed to touch insulation without overheating the fixture. When installing new non-IC fixtures, the insulation must be kept away from the canister. This insulation void increases heat loss from the room below even if the installation is airtight.

When installing recessed light fixtures yourself, first determine your lighting goals. To brighten an entire room, downlighting can be quite effective. In a normal-height ceiling, a four-foot spacing of recessed light fixtures provides an even lighting pattern at floor level. Typical six-inch-diameter fluorescent fixed vertical fixtures



SEA GULL LIGHTING

**This very shallow ceiling fixture uses a flat fluorescent circline tube. It can be used where you do not want to have a canister penetrate the ceiling.**

work well for downlighting. If you'd like to dim some of the lights, consider installing a second circuit and dimmer switch with incandescent bulbs in those fixtures.

For task lighting, a single fixed vertical fixture directly over the work area seems effective. Wall wash recessed lighting can be used to accent a painting or other wall hangings. An eyeball recessed light is best for this application because the light path can be adjusted. For a sloped cathedral ceiling, install an angular recessed fixture—preferably an IC model since it will be in contact with ceiling insulation.

It's not difficult to install recessed light fixtures by yourself. For an attractive, efficient installation, cut the mounting holes the exact size recommended by the manufacturer. This makes it much easier to create a good seal between the fixture and the ceiling. Before drilling and cutting holes, make sure your fixture layout clears all the floor joists. **KCL**

**Have a question for Jim? Send inquiries to: James Dullely, Kansas Country Living, 6906 Royalgreen Dr., Cincinnati, OH 45244 or visit [www.dullely.com](http://www.dullely.com).**

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#### WHERE TO SHOP

The following companies offer efficient recessed fixtures:

- ▶ Capri Lighting, 800-234-1890, [www.caprilighting.com](http://www.caprilighting.com)
- ▶ Cooper Lighting, 770-486-4800, [www.cooperlighting.com](http://www.cooperlighting.com)
- ▶ Juno Lighting, 847-827-9880, [www.junolighting.com](http://www.junolighting.com)
- ▶ Lightolier, 800-215-1068, [www.lightolier.com](http://www.lightolier.com)
- ▶ Sea Gull Lighting, 800-347-5483, [www.seagulllighting.com](http://www.seagulllighting.com)