

LED Lighting

Ready for prime time?

Reducing electricity needed for lighting will reduce greenhouse gas emissions, save billions of dollars and reduce our dependence on fossil fuels. There's no doubt that light-emitting diodes (LEDs) will help reduce electricity needs. They already dominate the market for traffic lights, automotive tail lights, store signs and other specialty design applications. Can they penetrate the residential market and perhaps dominate?

LED lighting is beginning to appear in the residential market. The technology is advancing at a fast pace with increased efficiencies and new products coming to market. Lofty prices are the biggest limitation to residential use. As the technology and market acceptance improves, production volumes will increase, more manufacturers and distributors will enter the market, product selection will improve and prices will fall. LED lamps today can cost more than 4 times as much as comparable compact fluorescents (CFLs).

Is LED lighting a suitable residential alternative to incandescents or CFLs?

It depends..... on the application and the cost. They're environmentally friendly and cost aside; they're very effective for under counter and accent lighting, landscape lights and night lights. Consider a "test drive" before buying LEDs for reading lamps, spots or floods. Cost may be a barrier. If not, it's a matter of personal preference.

Advantages of LEDs:

- Very low energy consumption
- Long service life – up to 50,000 hours
- Rugged and durable – resistant to thermal and vibration shocks
- Superior directional light distribution (spots)
- No infrared or ultraviolet radiation
- Safe and environmentally friendly – cool to the touch, contain no mercury
- Instant activation, no flicker, dimmable
- Broad color range – can produce white light and all colors of the spectrum

Disadvantages:

- Expensive
- Limited variety
- Limited availability
- Heat sensitive; excessive heat will reduce effective life
- Lenses or reflectors needed to create a controlled, broad beam (floods)
- Colors may differ from incandescent and fluorescent

Residential applications:

- Linear strip lighting (under kitchen cabinets)
- Outdoor and landscaping lighting
- Art lighting
- Night lights
- Stair and walkway lighting
- Task and reading lamps
- Recessed lighting/ceiling cans