

# SMART IDEAS FOR YOUR BUSINESS®

## LED LIGHTING

### FACT SHEET

LED (light-emitting diode) lighting is a rapidly changing work in progress; everything you knew about LEDs last year is probably out of date today. The great potential of LEDs' efficiency and long life has caused manufacturers to devote considerable resources to improving manufacturing processes and costs, while new applications continue to appear.

LEDs are completely unlike other forms of lighting. They emit light in a specific direction, while an incandescent or fluorescent lamp emits light (and heat) in all directions. LED lighting uses both light and energy more efficiently. Other features include:

- » **Near-monochromatic light:** An individual LED chip emits light in a specific wavelength (color), which makes them efficient for colored light applications
- » **Size:** LED lights can be very compact and low-profile, an advantage where space is at a premium
- » **Breakage resistance:** LEDs use no breakable glass or filaments, so they are resistant to vibration and well-suited to locations where breakage is an issue
- » **Cold temperature operation:** LED performance actually increases as operating temperatures drop
- » **Rapid cycling capability:** Traditional light sources will burn out sooner if switched on and off frequently, but LED life and lumen maintenance is unaffected by rapid cycling
- » **No infrared (IR) or ultraviolet (UV) emissions:** Unlike other forms of lighting, LEDs intended for lighting do not emit IR or UV radiation

There are many indoor and outdoor LED lighting applications suitable for business facilities. ComEd's *Smart Ideas for Your Business*® program offers cash incentives to help our commercial and industrial customers replace or retrofit less efficient lighting with more efficient alternatives.



### USING LEDs

LEDs' monochromatic light makes them particularly efficient for colored light applications. In traffic lights, for example, LEDs have largely replaced the old incandescent plus colored filter systems. While a red filter on an incandescent lamp can block 90 percent of the visible light from the lamp, red LEDs provide the same amount of light for about one-tenth the power (12 watts compared to 120+ watts) and last many times longer.

With their other unique characteristics—low profile, lower energy consumption, good performance in cold environments and breakage resistance—LEDs are well-suited to a variety of indoor and outdoor signage.

## PUTTING LEDS TO WORK

One way businesses can take advantage of LEDs' efficiency is by replacing incandescent exit signs, which operate continuously, with LED exit signs. It's a relatively fast and inexpensive project, so even smaller buildings can realize solid energy savings. A typical exit sign's electricity consumption drops from about 40 watts (incandescent) to about 5 watts, saving 300 kWh per year, per sign.

LED exit signs also offer lower maintenance, and they are typically brighter and easier to see in an emergency than comparable incandescent or fluorescent lights. ComEd's *Smart Ideas for Your Business* program offers cash incentives to help offset the retrofit cost.

LEDs are also being used in outdoor channel signs to reduce energy and maintenance costs. Strings of LEDs can take the place of neon as well, and lighting manufacturers continue to create new ways to use LEDs in signage. ComEd's *Smart Ideas for Your Business* program offers incentives for replacing incandescent, neon and other low-efficiency signs.

## PARKING LOTS AND OTHER OUTDOOR AREAS

Recent advances in LED technology have resulted in a new option for lighting outdoor areas, including streets, roadways, parking lots and pedestrian areas. LEDs offer several potential advantages over metal halide and high-pressure sodium lighting:

- » LEDs deliver focused, uniform light
- » Without glass or filaments, LED lights are less prone to breakage from vandalism or accidents
- » LEDs turn on instantly without run-up time or restrike delay
- » Their compact and low-profile size means that even "large" LED fixtures producing thousands of lumens can be lower-profile than their HID counterparts
- » Their directional light emission reduces light trespass and "sky glow"
- » Cold environments do not affect them

Replacing or retrofitting outdoor and parking garage HID fixtures with LEDs is eligible for incentives from *Smart Ideas for Your Business*.

## LED REFRIGERATION CASE LIGHTING

Refrigerated display cases in grocery stores and convenience stores are typically lit by fluorescent systems. As temperatures drop, however, light output for fluorescent lamps can decrease by as much as 60 percent. LED lighting actually performs better in colder temperatures, and LED lighting uses half the energy of fluorescent systems while emitting less heat.

The low profile of LEDs again is an advantage in the close quarters of a refrigerated display case, and because the light from LEDs can be "aimed," they help make displays effective as well as efficient. *Smart Ideas* provides incentives for replacing fluorescent refrigerated case lighting with LED illumination.

## CONTACT US

For more information about *Smart Ideas for Your Business*, including applications and incentive amounts, visit [www.ComEd.com/BizIncentives](http://www.ComEd.com/BizIncentives). You can also reach us by phone at **888-806-2273** or email us at [SmartIdeasBiz@ComEd.com](mailto:SmartIdeasBiz@ComEd.com).

