



New Lighting Technologies Offer Exciting Upgrade Opportunities

According to the U.S. Department of Energy, the nation's estimated five million commercial, industrial, and institutional buildings (almost 90% of which were built before 1986) could reap tremendous benefits by undertaking a lighting upgrade. A seemingly inconspicuous and often overlooked element within a building's infrastructure, lighting actually accounts for as much as 30-40% of electricity use in the typical commercial facility and is a primary source for significant cost savings. Experts believe that the vast majority still contain outdated lighting systems that could readily be upgraded to achieve substantial energy and cost savings.⁽¹⁾

Fortunately, the lighting industry has developed a wide variety of innovative technologies in the last 10-15 years that have revolutionized the end user market, delivering high-performing and energy-efficient lighting products that can reduce lighting costs by up to 30-50% and total facility energy consumption and costs by as much as 20-25%.⁽²⁾ Lighting products such as T8 and T5 fluorescent lamps, electronic ballasts, compact fluorescent lamps, lighting controls, electronic HID lighting systems, and LEDs are just a few of the innovative offerings that have driven a multitude of lighting upgrade opportunities in all market sectors and applications. Following is an overview of these and other popular lighting upgrade products:

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High-Efficiency T8 Lamps and Ballasts

A new generation of optimized, high-performance, and high-efficiency lamp and ballast technologies can reduce total system wattage by over 45% relative to the use of older T12 fluorescent systems driven by magnetic ballasts, and by as much as 20-30% relative to the use of conventional T8 lamps and electronic ballasts. As an added benefit, these new T8 lamps utilize high Color Rendering Index phosphors, which improve color rendering and lumen per watt performance, and are available in a range of energy-saving models from 25 to 30 watts for additional energy savings.

Dimming and Controllable Lighting Systems

Popularized within the last five to 10 years, dimming products and one-touch, easy-to-use-and-install controllable lighting systems are readily available for fluorescent lighting configurations, and have been very successful in reducing energy consumption, minimizing maintenance concerns, increasing the degree of personal control over lighting systems, and promoting environmental sustainability. In addition, digital addressable lighting interface (DALI) products can help automate and improve the accuracy and efficiency of lighting systems as well as subsequently reduce energy consumption and costs.

T5/HO and T5/VHO Products

Based on its energy efficiency and high lumen output, T5/HO (High Output) and T5/VHO (Very High Output) fluorescent lighting technology has become a popular upgrade option in a variety of high-bay applications previously supported by High Intensity Discharge (HID) lighting. Ideal for warehouses, shop floors, gymnasiums, big box retail establishments, and plane hangars, T5/HO and VHO technology offers white light, no color shift, and can be controlled with dimmers or occupancy sensors to offer high performance, long life, and energy efficiency to a broad range of applications.

Compact Fluorescent Lamps

Providing the efficiency and long-life benefits of fluorescent technology for incandescent applications, integrated compact fluorescent lamps last up to 10,000 hours (8-10 times longer than incandescent lamps), are 75% more energy-efficient than incandescents (e.g., a 23-watt compact fluorescent can replace a 100-watt incandescent), and offer greater design flexibility. Studies show that for each incandescent that is replaced by a compact fluorescent bulb, \$30-\$50 can be saved on the electric bill over the life of the bulb. Because of their long life, compact fluorescent lamps are ideal in continuously-lit venues, including a variety of public spaces as well as in applications requiring directional and orientation lighting.

LEDs

An emerging and increasingly popular technology in a variety of outdoor and sign applications, light emitting diodes (LEDs) are highly efficient, give off very little heat, and are long-lasting – sporting an average rated life as long as 50,000 hours (compared to the 1,000-hour lifespan of many incandescent bulbs in the commercial setting). As a result, their use is very cost-effective and also minimizes maintenance expenses. Due to their long-life, energy efficiency, brightness, and color consistency, LEDs are ideal replacements for incandescent lamps in such applications as illuminated exit signs and traffic signals and are well-suited for a variety of outdoor and architectural venues. Based on their long-range market potential within a broad range of other niche as well as general lighting applications, LEDs are currently the target of a great deal of research and development by both the lighting industry and federal government.

Pulse-Start Metal Halide Systems

Compared to older probe-start metal halide technology, pulse start metal halide technology offers many advantages for the variety of industrial and outdoor applications utilizing HID light sources. Pulse-start metal halide technology is more energy-efficient and offers enhanced lamp-to-lamp color consistency. In addition, it offers faster run-up and quicker restrike time and can deliver 10-15% greater lumen maintenance over probe-start systems.

Ceramic Metal Halide Systems

Compared to older quartz discharge tubes, ceramic technology is chemically more stable, can resist higher temperature loads, and its dimensions can be more tightly controlled. As a result, ceramic lamps offer better color rendering, a more stable color throughout lamp life, a longer service life, and a more consistent color appearance from lamp to lamp. When driven by electronic ballasts, this optimized system achieves up to 25% greater efficiency versus a magnetically-ballasted system and enables the installation of more fixtures per circuit, lowering overall installation costs and further reducing the total cost of operation. Based on these comprehensive benefits, ceramic metal halide lighting systems incorporating electronic ballast technology have become popular in a variety of outdoor venues and are an attractive alternative to halogen lighting in retail stores, shopping malls, hospital lobbies, and many other applications.

Lighting users are strongly encouraged to investigate their broad range of high performing and energy efficient lighting upgrade options, and a wide network of lighting professionals is available to advise on lighting technologies and applications and assist with upgrade projects. And with the additional 2006-2008+ availability of government-sponsored tax deductions on qualifying upgrades through the Federal 2005 Energy Policy Act as well as the enactment of other landmark energy-related legislation such as the 2007 Energy Independence and Security Act, there has never been a better time to reduce your energy costs, improve your facility's lighting quality and ambiance, elevate employee productivity, or benefit the environment. Don't wait to capitalize on the benefits that an energy-efficient lighting upgrade can offer your employees and facility!

As the #1 ballast manufacturer in North America, Philips Lighting Electronics is uniquely positioned to provide end users with the power to make a difference through sustainable lighting options. When you see the Philips Advance brand name, you can count on 60+ years of experience making the most preferred ballasts in the business.

As part of our effort to support environment responsibility, we're proud to offer Smart Solutions™ - products, services, and expertise to help you achieve your lighting sustainability goals at every level. For more information, visit www.philips.com/advance.

Sources:

(1) Based on findings from the 1999 Commercial Buildings Energy Consumption Survey (CBECS), published by the U.S. Department of Energy and the Energy Information Administration, as well as the 2002 U.S. Lighting Market Characterization (Volume 1), published by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy

(2) The Energy Cost Savings Council's Analysis of 1,000 Electrical Product Upgrade Projects (1998)



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