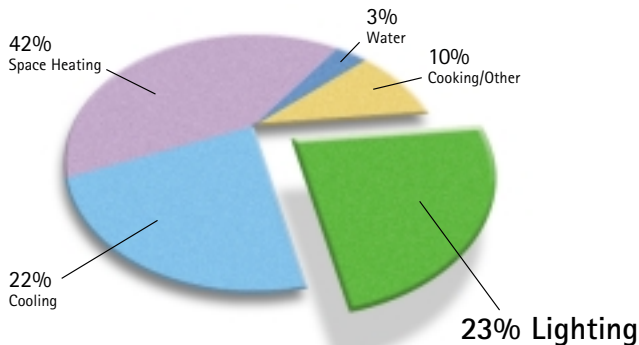


Ballasts and the Energy Crisis.

As the United States is plunged deeper into energy shortages, black-outs and brown-outs, the American public will be forced to find ways to reduce energy consumption. As lighting comprises roughly 25% of a typical commercial/industrial facility's energy bill, it stands to reason that lighting retrofits demand serious consideration. When considering lighting retrofits, the ballast is an integral element of this process. That being said, lets review what functions a ballast actually serve, and how utilizing energy saving ballasts can help significantly reduce energy bills.

Percentage of Energy Use in Commercial Buildings by End User



Changing your lighting is the best, first step toward cutting your electric bill and fighting off blackouts.

Ballast Function



Fluorescent lamps sold in the U.S. today are available in a wide variety of shapes and sizes. They range from miniature versions rated at 4 watts, 6 inches in length with a diameter of 5/8 inches to 215 watt models, 8 feet or more in length with diameters exceeding 2 inches.

Voltage required to start the lamps is dependent on lamp length and diameter, with larger lamps requiring higher voltages. Each fluorescent lamp must be operated by a ballast that is specifically designed to provide the proper starting and operating voltage required by that particular lamp.

In all fluorescent lighting systems, the ballast performs two basic tasks:

- Provides the proper voltage to establish an arc between the two electrodes
- Regulates the electric current flowing through the lamp to stabilize light output

In some fluorescent lighting systems the ballast also provides a controlled amount of electrical energy to preheat lamp electrodes.

The Forces at Work



Three key factors, among others, are currently driving the energy market:

1. Federal mandates to install more efficient electronic ballasts and lamps

Under the proposal, new efficiency standards for electronic ballasts will go into effect on April 1, 2005. After that time, all fluorescent lamp ballasts produced by lighting manufacturers for the commercial and industrial new construction or renovation market must be energy efficient electronic ballasts that meet the new standards, rather than the older less-efficient magnetic ballasts. In the case of the replacement market, the magnetic ballasts will be available until 2010 for building owners to repair current systems.

2. Rising costs per kilowatt hour of electricity

In many cases, energy bills are subject to a 40%-60% increase, seriously impacting businesses operating expenses.

3. Power shortages caused by distribution snags, a lack of generating capacity and growth in demand.

Energy efficient lighting solutions attack all of these factors head on, creating opportunities for you to save money now.

By upgrading your lighting now, you'll get a jump on government mandates that take full effect in 2005. You will pay less, on your terms, while avoiding the very real – and potentially painful – costs of waiting.

While rising rates shrink every dollar you spend on electricity, lighting upgrades stretch that dollar, adding value back into your bottom line.

Lighting technology which you can install today reduces demand, creates load leveling capabilities, and gives you more control over energy management programs.

Energy Saving Options

There are several options now available in all forms of ballasted lighting to decrease energy consumption

T12 to T8 Technology

The most straight forward energy saver is to replace standard T12 fluorescent lamps and magnetic ballasts with more efficient T8 lamps and electronic ballasts. Electronic ballasts operate the lamp at a frequency of 20 kHz or greater rather than the 60 Hz operation of electromagnetic and hybrid types. This takes advantage of increased fluorescent lamp efficiencies at these higher frequencies. This high frequency operation is accomplished by using electronic circuitry which generally results in a more efficient, smaller, lighter and quieter ballast design than the standard electromagnetic ballast.

Dimming

New dimming and control capabilities are also making electronic ballasts the smart choice for facility and energy managers. Fluorescent dimming can cut energy use by up to 80% over incandescent systems. The lighting needs within a building change throughout the day. Yet, today's typical fixed light output, electronically ballasted lighting system provides 100% full light output during all workday hours. Although an accepted practice, this method of operation results in a waste of energy and inflated power costs. By adjusting light output with controllable electronic ballast, energy consumption of the lighting system can be minimized while providing the illumination required for the space or task.

Probe-Start to Pulse-Start HID

Replacing old probe-start high intensity discharge (HID) lighting with new pulse-start metal halide systems not only saves 12-20% per fixture in energy – it also provides better, whiter light and extends lamp life. Optimized pulse-start ballast/lamp systems boost both lamp life and lumen output by 25% to 50%. Improving the quality and quantity of white light throughout lamp life provides substantial energy savings since lower wattage pulse-start lamps produce the same light output as higher wattage probe start lamps.

Incandescent to Compact Fluorescent

Compact fluorescent lamps offer significantly longer lamp life while consuming much less energy over an incandescent lamp. As an example, you can replace a 200 watt incandescent system to a 42 watt compact fluorescent and realize over 150 watts in energy savings.

About Advance Transformer Co.



Advance is North America's largest, most preferred maker of ballasts for lighting. Advance has the technology, the proven products and the ready-to-install solutions to cut your energy use across all lighting applications: Linear and compact fluorescent, high intensity discharge (HID), downlighting, dimming, track lighting and more.