

Lighting by Design

Editor's Note: This article is the sixth in an ongoing series by industry experts David Brewster and Maurice Minno on how c-store executives can better compete in this transformative economy.

A store has a luminous identity, like it or not. Its illumination—lighting—significantly affects customers' feelings about the store's offer. Better lighting, better feelings, better customer experience.

Over the past 100 years or so, science has developed three basic, common sources for artificial light:

1. Incandescent: The original electric lights, now very sophisticated. Lowest lumen per watt efficiency, thus hottest "burning." Typical life of 1,000 to 2,500 hours can be hugely increased by dimming.

2. Fluorescent: Old technology, but recently vastly improved. High lumen per watt efficiency, thus cool burning. Typical life is 6,000 to 10,000 hours.

3. LED (light emitting diode): Very new technology, and rapidly improving. Very high lumen per watt efficiency, and cold burning. Probable life could be in excess of 50,000 hours. Promising.

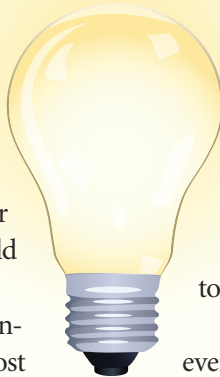
Generally, the cooler a lamp burns, the more expensive is its initial equipment cost. But its life-cycle cost in terms of energy used, replacements and consistent luminous environment has been proven to save money.

A store needs three kinds of lighting:

1. Ambient: Overall lighting, often different in customer areas than in staff areas. This type of lighting is best achieved with a pattern of high-output fluorescent lamps such as T8 or compact fluorescent floods, each having a color temperature of approximately 3000 K (kelvin). (For more, see story on p. 67.)



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2. Task: For specific operational function or to increase illumination and enhance ambient light in special focus areas. This lighting is usually best achieved with compact fluorescent lamps of relatively high lumen output and 3000 K. Typically use in recessed can fixtures.

3. Accent: For focus on specific products, merchandising and décor. This type of lighting can be achieved in a number of ways. However, the simplest may be to use compact halogen incandescent lamps at line voltage in a track-lighting system controlled by dimmers. The fixtures are small and attractive and can accommodate a range of lamps with medium and narrow beam patterns. The light tracks need to be mounted above and near the things to highlight.

Fixtures can be easily moved and aimed. Again 3000 K. These lights are very hot so keep them away from flammable material.

Keep your equipment as simple as possible, limit the different types of lamps you use, and use them correctly. With this approach you can highlight a store's offer pleasingly and effectively.

Here are some tips on how to give a store and customers a positive luminous identity:

▶ Don't light the store evenly. That will make everything flat and boring. Have some brighter and some darker areas. This creates some contrast, which tends to "move the eye."

▶ Light vertical surfaces of gondolas.

▶ Make sure you create some shadows to give depth to the products and spaces in the store. This is done by task and accent lighting.

▶ Accent light the most important endcaps and merchandise, but don't accent too many areas.

▶ Make sure your color of light is about 3000 K. This will warm up and bring out flesh tones in customers and fresh products, and enhance package labeling appeal.

▶ Use some lighting as décor, but don't overdo it.

▶ Keep accent lights from shining into customer eyes.

Executing lighting by design will incur some upfront costs. However, the return on that investment will be lower life-cycle costs, increased product visibility and appeal, improved customer experience and decrease in overall environmental impact because of efficient energy usage. ■