



# CMP's Lighting Connection

Bright ideas to improve your bottom line

Central Maine Power Company, 83 Edison Drive, Augusta, Maine 04336

## The right light: prescription for quality care

When you drive past the Victorian Villa in the rural town of Canton, everything looks peaceful and quiet. Step inside, though, and you'll find the hustle and bustle of a staff of 130 healthcare professionals providing services to more than 100 residents.

What does it take to provide high quality care for

lumen levels are also essential for accuracy in tasks such as dispensing medicine. And light quality and quantity contribute to the safety and comfort of residents and employees alike.

Studies show that lighting plays a psychological role as well. At Victoria Villa, proper lighting helps increase residents' energy, motivation, and confidence. There's a practical side, too. Most of the residents are seniors, so the amount of light needed to read, do crafts, play games, or even simply walk around, is much higher than the light needed by younger eyes.

"We looked at our lighting and realized that, for our professional healthcare personnel to do the best job, we need both a high quality and a high level of light. It makes a very big difference."

Mark Jacobs, CEO  
Victorian Villa

### As our eyes age, we need more light

"As early as our 40s, we begin to lose the visual acuity of earlier years. And, although we are all affected differently, it is

safe to say that as we age our eyesight and our perception of light diminishes. Proper illumination can compensate for many age-related changes in the visual system."\*

Villa residents? One answer is the right light. Mark Jacobs, CEO of Victorian Villa, points out its importance. "We looked at our lighting and realized that, for our professional healthcare personnel to do the best job, we need both a high quality and a high level of light. It makes a very big difference. For example, in the proper light, nurses can spot certain symptoms they might otherwise miss."

### Getting the light just right

So, what is the right light? For Victorian Villa, it's light that helps them deliver the highest quality care. Lamps need to have a high CRI (color rendering index). This 'correct color' illumination helps the staff evaluate patients — by skin tone, for example. High

As a person reaches age 60, we need to double the light strength a 30-year-old needs to see objects. And, as the eye muscles age, they do not adapt to light level changes as quickly. So, the

need for a smooth lighting transition from light to dark areas (and vice versa) becomes increasingly important.

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Victorian Villa Staff (L to R):  
Thyra Stimans  
Mark Jacobs  
Shelly Harlow

## The right light...



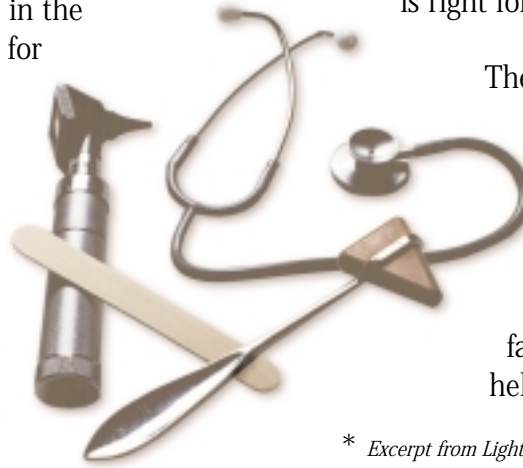
### Improve your lighting and reduce your maintenance

Optimal lighting is also good for cost-efficiency. The ongoing lighting upgrade has made a difference in the maintenance load for Jim Bryant,

Victoria Villa Facilities Manager. "I've been here over 20 years and we've had many different types of lamps. As we move from standard fluorescents to T-8 lamps and electronic ballasts, we become much more efficient with respect to energy and inventory stocking." Optimal lighting has a direct effect on the bottom line of the business.

### The benefits of better lighting — no matter what business you are in

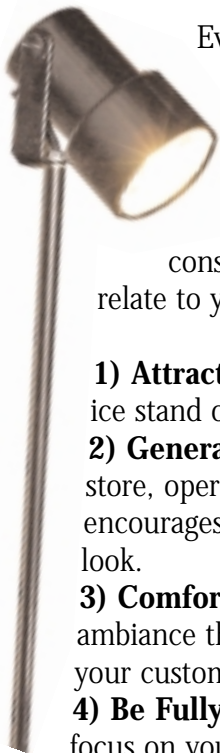
Whether your business lighting goal is increased sales, creating atmosphere, employee productivity and comfort, or safety and security, there's an important lesson to be learned from Victorian Villa. Make sure the lighting is right for your clients and customers.



The U.S. has a population that is living longer. If you want to grow your business, you'll want to make it easier for the aging community to see your products, access your services, and feel secure in your facility. The right lighting can help on all three counts.

*\* Excerpt from Lighting Design for Aging Eyes by Stan Pomeranz*

## Every business can benefit from improved lighting



Every business is different. Yet every single business can benefit from lighting that is chosen to help achieve specific business needs and goals.

Start with a look at the list below. Then consider how lighting quality and levels relate to your business needs.

- 1) **Attract Attention** – make your product/service stand out from your competition.
- 2) **Generate Interest** – display your business, store, operation, products, or services in a way that encourages potential customers to stop, enter, and look.
- 3) **Comfortable Atmosphere** – create mood and ambiance that influences the purchasing behavior of your customer and their opinion of your business.
- 4) **Be Fully Integrated with Business Identity** – focus on your business strategy and cater to your target audience/customer.
- 5) **Adaptability** – make sure you keep up with changing strategies and trends that affect your industry and your business.



It's an understatement to say that lighting can help you meet these goals. It's a reality that lighting can make a tremendous difference.

Quality lighting at the right level encourages sales. It's easier for a customer — especially as we age — to walk around and get a good look at your product under quality lighting. Services are easier to sell in a pleasant, relaxing environment. Browsers are more likely to enter your store if the lighting creates a feeling of safety and invitation.

With adequate quality light, productivity and accuracy go up, too. Employees — whether sales, manufacturing, or office staff — make fewer errors when there is adequate light. That means lower costs. And better profits.

Use the chart on the next page as a starting point to assess the lighting level needs of your business. You should consider light to be a positive factor you can add to your office, store, establishment, or other facility.



Integrate it in the right way and it will encourage sales, help you cut costs, and provide a tremendous overall boost to your business.

### Lighting Levels Applications:

Amount of general (vs. accent & task) lighting	Foot candles	Areas of application
Very low	20	Galleries, museums, boutiques
Low	20-40	Restaurants, "exclusive" shops
Average	40-60	Most stores, hospitals, offices
Fairly high	Above 75	Supermarkets, discount stores, hospital examination areas
Very high	300-3000	Daylight situations in store windows and sales areas

Source: Philips General Lighting Application Guide

### Lighting Terms

**FOOT CANDLES:** the measurement of illuminance (amount of direct light thrown by one candle).

**KELVIN (K):** numerical assessment of a lamp's color derived from the colors of a piece of metal as it is heated to different (Kelvin) temperatures; as the temperature increases, the associated color grows cooler, whiter.

**COLOR RENDERING INDEX (CRI):** a scale that runs from 0-100 with a rating of 100 indicating the best color detection ability in an object.

### Color Renditions:

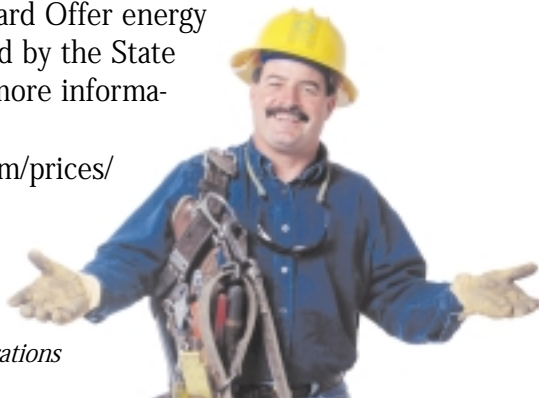
Type of lamp	Approx. K	Approx. CRI	Colors strengthened	Colors grayed
Fluorescent				
Cool white	4,000	62	Orange, yellow, blue	Red
Warm white	3,100	52	Orange, yellow	Red, blue, green
Deluxe cool-white	4,000	89	All nearly equal	None very much
Deluxe warm-white	3,000	73	Red, green, orange, yellow	Blue
Incandescent	3,000	97	Red, orange, yellow	Blue
Clear metal halide	4,600	65	Blue, green	Red
High-pressure sodium	2,200	21	Yellow, orange, green	Red, blue

Source: IIE Solutions - Human Factors Engineering Design, 1993

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[www.cmpco.com/prices/](http://www.cmpco.com/prices/)



Jim Wright,  
Transmission Operations  
and Maintenance



***We changed all the lamps in our office a year ago and now I'm getting complaints about them burning out. My facility person says I bought "cheap" lamps and I need to spend more. Please advise.***

Odds are you purchased replacement lamps designed for residential use. When buying lamps for your business, you have to look at both performance and price — kind of like buying a car.

Comparing a 4-foot fluorescent that costs a dollar to one that's 3-6 times as expensive is much like comparing a Yugo to a Rolls Royce. Fluorescent lamps are glass tubes

filled with various gases, phosphors, mercury, and some starting aids. The better the mix of these components, the higher the performance of the lamp. As with all things, when quality goes up, so does the manufacturing cost and the price tag.

Look for a "performance rating" on the side of the lamp packaging. It should state the watts consumed, average life, lumen output, and, in some cases, the color temperature. Lower cost lamps often have a much shorter rated lamp life — 10,000/12,000 hours compared to twice that for a commercially-rated lamp. Evaluate burn time and lamp cost against your disposal rates and costs. There's a big difference in lumen output, too. A typical lower cost lamp has an initial output of 2,700 lumens and then quickly drops off to 2,300 or less. A high quality, energy efficient T-8 lamp averages 3,100 to start, then drops to 2,950. That's a 15% light level loss with the lower cost lamp compared to just 5% with the better one. Additionally, color correction is hard to find in less expensive lamps (see our cover story and charts for more information on color rendition).

A 10,000-hour lamp in your basement shop might only be used 500 hours per year and thus could last 20 years. In a typical office it might burn from 4,500 hours per year right up to 8,760 hours if it's on 365/24/7.

What does this all mean? Buy lamps that are rated to fit your specific setting and needs. Otherwise, they'll burn out quickly and the associated business costs will mount up fast — outweighing any upfront savings on the cheaper lamp itself. Consider labor costs for more frequent change outs, additional money purchasing new lamps more frequently, and increased disposal costs.

There are many things to consider when selecting lamps. Most lamp manufacturers have excellent web sites with very helpful information about all kinds of lighting issues. I encourage you to check out [gelighting.com](http://gelighting.com), [philips.com](http://philips.com), [sylvania.com](http://sylvania.com) and others. Take time to do a little homework and you'll make the right business choice the next time you're replacing lamps.

And, as always, never hesitate to give a CMP Lighting Expert a call at **1-800-649-1169** to assist with your lighting project!



*Dick Bacon, a CMP Lighting Expert, has helped over 500 businesses improve their bottom line with better business lighting. Are you next?*

Dick Bacon, CMP's Lighting Expert, has over 25 years of experience in the lighting business working for major electrical wholesalers and Central Maine Power Company. Dick is a member of the Illuminating Engineering Society of North America (IESNA). Contact our Lighting Expert: E-mail: [lighting.expert@cmpco.com](mailto:lighting.expert@cmpco.com), or call toll-free: 1-800-649-1169.

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