



In this month's issue I would like to discuss the concept of **retrofitting lighting fixtures**. The recent growth of the retrofitting market can be attributed to provincial hydro rebates being offered to the end user to convert their existing lighting fixtures to more energy efficient ones. The actual amount of the rebate depends on what type of retrofitting is being performed.

Energy efficiency is dependant on the ballast, the wattage and the number of lamps in the fixture. As a quick calculation, one can expect to save 20% in electricity costs associated with lighting when converting from a 40W T12 lamp to a 32W T8 lamp. This would translate into savings of about \$ 2.16 per lamp per year assuming an average total cost of \$ 0.09/KW with 3,000 hours of operation per year. For every 4 lamp fixture the savings would be \$ 8.64 per year. The savings would be greater if the hours of operation were more and/or the cost per KW is greater than this example.

There are three different ways retrofitting a lighting fixture, each yielding a different result. Provincial rebates are dependant on the type of retrofit.

- One of the most common retrofitting procedures is when the ballast, sockets, and lamps are replaced with energy efficient lamps together with an electronic ballast. For example, if the fixture had 4 X 40W T12 lamps, they would be replaced with 4 X 32W T8 lamps (or one to one). The cost would be the ballast, sockets, lamps and the installation time. The savings can be calculated as above and a break even can be determined. In this example, provincial rebates are usually determined by the number and type of ballast being installed. However, this conversion method causes the fixture to lose its factory CSA/UL certification and needs to be recertified on site (responsibility of the contractor).
- Other considerations should include the fixture itself. When the fixture was first manufactured the standard paint reflectivity was about 84%. Over the years, this number has decreased even further due to the environmental conditions, resulting in great loss of reflectivity in old fixtures. Today, Peerless' standard paint has a 94% reflectivity and the optional Maximum Reveal (MR) paint an incredible 97%. The higher the reflectivity, the better the light output. This allows for eliminating at least one lamp from the fixture, accounting for even greater savings. For example, 4 x 40W fixture would be retrofitted to a 3 X 32W fixture. This type of retrofit usually includes in addition to ballast, lampholders and lamps, replacement of the socket brackets and the addition of a reflector. Another consideration is the condition of the lens if the fixture has one, the older it is the less efficient it is and should be also replaced.
- Retrofitting can also include replacing the entire fixture with a new CSA certified one. Provincial rebates are larger with this scenario and usually include specific fixtures from specific manufacturers. A common application is replacing HID fixtures with new T8/T5 Florescent high bays in box store/warehouse environments. The cost of this retrofit type usually includes the new fixture and the installation time. As a guideline, installing a new fixture takes approximately 1/3 of a time necessary to retrofit an older fixture with ballast and bulbs.

Most retrofitting applications are specific and are usually performed on a site-by-site basis. Each will have a different savings, rebates, costs and payback.

For further information regarding how Peerless can assist you with retrofitting please contact an authorized Peerless representative.



Barry Fagen
President

Peerless Electric Co Ltd

9145 Boivin St., Lasalle, QC, H8R 2E5

Tel: (514) 595-1671 ext. 323 Fax: (514) 595-4411

Email: BFagen@peerless-electric.com

Web : www.peerless-electric.com

