

# Energy misers that just won't exit...

**COLD CATHODE exits deliver an unbeatable combination of long life lamp and energy efficiency...**

Over five years lamp life? Reduce your energy costs by more than half? Slash your maintenance bills?

These are some of the extraordinary benefits claimed by emergency escape lighting manufacturers who have implemented Cold Cathode lamp technology. Let's look a little closer...

## OVER 5 YEARS LIFE

Exit signs which use 50,000hr CCFL lamps do not require a lamp change for over five years. This translates to as much as \$125 in reduced maintenance costs when compared with routine 6 monthly lamp changes performed by most maintenance companies.

Importantly for emergency lighting manufacturers, CCFL lamps produce very little heat. Heat is the major enemy of battery life and any technology that reduces luminaire operating temperatures will improve battery service life.

Clevertronics also use energy efficient, low heat *switch-mode* charging circuitry to further improve the battery environment and power savings.

## ENERGY SAVING

A single 4w Cold Cathode (CCFL) exit uses less than half the energy of a traditional 8wT5 or 10wT8 exit. Energy cost savings alone amount to \$35 for every CCFL exit over a five year period.

Approximately 350kg less Carbon Dioxide (CO<sub>2</sub>) is released into the atmosphere through producing the energy required. That's the equivalent emissions generated by driving over 1100 km's in your family sedan – for every exit.

## Emergency Exit Lighting Cost Comparison

	10w Exit	4w CCFL Exit	Savings PA	Savings 5yr
<b>Energy Use and Cost</b> (These figures can be adjusted for your own comparisons)				
Power per unit (W)	14.50	6.60		
Cost per KWh (\$)	\$0.10	\$0.10		
<b>Energy Cost Comparison</b>				
Energy Used PA (KWh)	127.02	57.82	69.20	346.02
Power Cost PA (\$)	\$12.70	\$5.78	\$6.92	\$34.60
			54.48%	54.48%
<b>Environmental Impact Comparison</b>				
Coal Needed (Kg)	58.43	26.60	31.83	159.17
CO2 Created (Kg)	127.02	57.82	69.20	346.02
Equivalent Car Travel !! (Km)	429.33	195.42	233.91	1169.54
<b>Replacement Lamp Comparison</b> (These figures can be adjusted for your own comparisons)				
Replacement Lamp Cost	\$2.50	\$11.00		
Labour Cost Per Lamp Change	\$10.00	\$10.00		
<b>Maintenance Cost Comparison</b>				
Lamp changes required (PA)	2	0		
Labour plus Lamp Cost	\$25.00	\$0.00	\$25.00	\$125.00
			<b>1 YR</b>	<b>5 YRS</b>
			<b>TOTAL COST SAVINGS per EXIT</b>	<b>\$31.92</b>
				<b>\$159.60</b>

## OTHER TECHNOLOGIES

The CCFL light source employed by emergency lighting manufacturers use less than half of the energy of traditional 8w and 10w lamps, and enjoy a greater lumen per watt light efficacy.

When compared to an alternative long-life light source, namely "white" LEDs, the CCFL enjoys an even greater advantage in lumens per watt efficacy.

## SUPERIOR SPACING

In addition, the narrow beam LED light source exits do not typically

achieve a light output which provides a usable emergency escape light spacing classification. As a consequence, an additional emergency light is required within 2m of such an exit – eliminating any energy and maintenance cost savings it may have enjoyed. In contrast, the CCFL light source provides a high spacing classification superior to most traditional fluorescent exit signs.

At this stage, Cold Cathode lamps offer far superior emergency exit application performance than any affordable lamp source available today.

## LIGHTING COUNCIL of AUSTRALIA – Energy Efficient Project



In October 2005, Clevertronics *Cleverfit* exits featuring low energy, 50,000 hour cold cathode lamps were selected to be installed in an energy efficient lighting showcase site at Retravision Auburn, Sydney.

### Calculations:

#### To calculate energy used in KWh per year:

1 year = 8760 hours  
eg: 10w Exit (approx 14.5w total energy, lamp + power supply)  
 $14.5w \times 8760hrs = 127020Wh = 127.02KWh$

#### Cost per KWh:

Energy Star website Sept 05 uses 10cents per KWh ([www.seda.nsw.gov.au/estar](http://www.seda.nsw.gov.au/estar))  
Aust Greenhouse office uses 10cents per KWh ([www.greenhouse.gov.au](http://www.greenhouse.gov.au))  
Other info: Energy Cost fact sheet from Technology Australia lists prices per KWh around Australia for large businesses ranging from 6.69 cents to 10.46 cents KWh based on 3504MWh consumption.  
Eg: 10w Exit (as above)  
 $127.02KWh \times \$0.10 = \$12.70$  per year.

#### Environmental Impact Calculations:

Formulas worked back from on-line calculator on Energy Star website Sept 05  
([www.seda.nsw.gov.au/estar\\_calculator\\_body.asp](http://www.seda.nsw.gov.au/estar_calculator_body.asp))

Coal needed per year (Kg) = Energy Used KWh x .46  
Eg: 10w Exit  
 $127.02 \times .46 = 58.43Kg$

CO2 created per year (Kg) = Energy Used x 1  
Eg 10w Exit  
 $127.02 \times 1 = 127.02 Kg$

Equivalent Car Travel (Km) = Energy Used x 3.37998  
Eg 10w Exit  
 $127.02 \times 3.37998 = 429.33Km$