ILUM-A-LITE PTY LTD

Light Eco

THE PROVEN ENERGY EFFICIENT COST SAVER FOR FLUORESCENT AND HI BAY LIGHTING

- Achieves exceptional Returns on Investment
- More than 40,000 installations worldwide
- No modification of light fittings required
- Light Eco is quickly installed with minimal disruption
- Reduces Greenhouse Gas emissions

Substantial Cost Saving, Intelligent Control.

LIGHT ECO reduces power used by fluorescent, high bay and discharge lighting by up to 30% with a minimal effect on light level. More importantly, Light Eco, in cutting the energy bills by up to 30%, achieves a payback of 12 to 18 months, based on an average kilowatt hour price of 10 cents. With energy costs rising, Light Eco continues to add to your bottom line year after year.

Light Eco is easily installed into existing fluorescent, high bay and discharge lighting circuits.

Light Eco is an Australian designed and owned product using advanced technology to provide a reliable, cost effective solution to reducing your power consumption. Light Eco has a compact effective design which allows ease of installation for both connection to the electrical wiring and mounting on the wall or in ceiling spaces.

How does Light Eco work?

Fluorescent and Hi Bay lights are normally operated within standard Utility supply voltage. The nominal supply voltage is only required to allow the lights to strike, thereafter the operating voltage can be reduced, still within the range of the Power Utility, with only a small reduction in light output. When a bank or strip of lights is turned on, Light Eco holds the voltage at normal for a preset time and then returns to economy mode. And you can see when you are saving! When Light Eco switches to economy mode a green light on the bottom of the unit is lit. Green means savings, green means a better environment.

Light Eco uses an autotransformer to switch from normal to economy voltage. After a start-up period, the autotransformer switches to the reduced voltage. The drop in current is dependant on the age and type of fittings. Cases documented show consistent savings in excess of 25%, many over 30%. Light Eco is not affected by the switching on or off of adjacent banks.

Light Eco is available in the following models:

XLS – The standard model saving 25% - 30% with current ratings of 10amp, 16amp and 20amp.

XLR – The 'Lite' model saving 20% - 25% with current ratings of 10amp, 16amp and 20amp

HID LE suitable for high bay and discharge lights with current rating of 16amps.

Light Eco is a proven product

Ilum-a-Lite has many satisfied customers using Light Eco in shops, offices, hotels, schools, factories, service stations, retail stores and government departments saving hundreds of thousands of dollars each year.

Light Eco is a proven, reliable system.

Light Eco is a proven product to save money on your electricity bills.

Light Eco is a proven product to reduce greenhouse gas emissions.

Light Eco has proven to have no ongoing costs once installed.

Light Eco has proven to be simple – no expensive lamps or fittings required.

Light Eco has proven return on investment

Light Eco has proven to reduce heat loads in office buildings.

Since the turn of the century Light Eco has saved two power stations' worth of annual electricity with more than 40,000 installations worldwide.

Experience has shown that 20 fully-loaded Light Ecos situated in a factory where 1400 tubes are 'on' for 20 hours a day will save $5000 on the annual electricity account, save 120 tonnes of CO2 with a return on investment of 88%, and payback in 13.7 months (saving based on an average kilowatt hour price of 10c).

Rising electricity prices mean that many companies and organisations are now paying up to twice this rate per kilowatt hour meaning Light Eco gives highly effective returns on investment.

Current and Voltage Sensing

When additional lights in a circuit are turned on Light Eco senses the change in demand and switches back to mains voltage, the timer restarts to allow the newly switched lights to warm up.

Light Eco can be used in areas where stable lighting is important such as office blocks, hotels, warehouses, supermarkets, schools and libraries.

Light Eco avoids mains-induced 'brownout' by continuously monitoring the mains voltage and automatically switching out of economy mode when the mains voltage drops to unacceptable levels.

Features Summary

- For use with Fluorescent, Hi Bay and Discharge lighting
- Saves 25%-30% of power cost
- Easy to retro-fit; simple, quick installation
- No modification of light fittings required
- No limit to the number of units installed
- System-wide failure is not possible
- Allows down line switching, so separately switched areas can be controlled by a single unit
- Current sensing for stable lamp switching
- Voltage sensing; 'brownout' minimisation
- Extends life of tube, ballast and fitting
- Reduced temperature of light fittings adding to total energy savings
- World leading technology and innovation
- Designed and manufactured in Australia
- Pays for itself in 1 to 2 years or often less*

*Dependant on cost of electricity, house of use and power consumption.

Models and Options

- Models from 5 to 13 KVA are available for large lighting distribution boards. These do not have current sensing and are not suitable for down line switching.
- A bypass switch can be fitted to Light Eco to allow manual bypass of economy mode during lighting maintenance.
- External control of Light Eco is made possible through a voltage-free connection to the unit. This can be used to connect timers, daylight sensors or building management system switches to the Light Eco unit.
- Daylight harvesting is possible using the external control facility and is the primary application with Hi Bay lighting.
- Extra sensitive current sensing is available. Normally Light Eco will sense the switching of 6 twin fluorescent light fittings (about 3 amps). Extra sensitive models will detect smaller loads – as little as two twin fittings.

Competitive Comparison

Light Eco achieves maximum savings with T8 tubes and magnetic ballast (the majority of existing fit outs). Another efficient form of fluorescent lighting on the market is T5 tubes with electronic ballast.

To save energy, customers can choose to install Light Eco on existing light circuits, or replace light fittings with T5 lamps and fittings. A comparison is shown in this table.

	T8 no LE	T8 with LE	T5
Lumens	3350	2850	2600
Lumens per watt	79.8	90.4	92.8
System Lumens per watt	79.8	90.4	72.4[1]
Temperature degrees C	24	22	35
Typical Cost per lamp	n/a	$18[2]	$50[2]
Typical ROI	n/a	18-20mths	3-5 years

Source: Product data sheets and wholesaler price lists.

1. Lumen output is 22% less than equivalent T8 so additional T5 fittings are required for the same light coverage.
2. Includes labour.

Air Conditioning Saving

Studies by the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) has determined that there is a direct relationship between saving energy on lighting and saving energy on air conditioning.

Ilum-a-Lite uses the ASHRAE formula to calculate savings on air conditioning and will include this on an assessment of energy savings.

How easy is Light Eco to install?

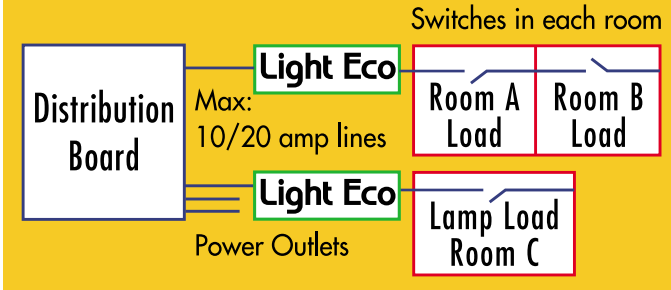
Light Eco is designed for retrofitting into existing installations, no modifications are required to existing light fittings.

Light Eco is simply wired into the electrical circuit, before or after the light switches and between the power distribution board and lighting load.

Light Eco may be mounted vertically, horizontally or hung from the false ceiling hangers. One person can complete an installation within 30 minutes. Interruption to lighting and downtime is a matter of minutes.

Circuit protection is the circuit breaker or fuse. Country wiring standards must be followed.

WIRING DIAGRAM



Technical Information

Input: Normal AC voltage[1] frequency 50 or 60 Hz.
Output: Full power timer, 1-5 minutes after switching on: Set to saving 28% of full power.

Identification	LE2.4	LE3.8	LE4.8
Load:	2400VA	3800VA	4800VA
Weight:	5kg (11lb)	7kg (15.6lb)	7kg (15lb 4oz)
Dimensions:	350 x 170 x 100mm (14" x 6.6" x 3.8")		

Tong Test – Current not to exceed:

	10 Amps	16 Amps	20 Amps
Maximum Load[2]			
36W fluorescent	50 tubes	80 tubes	100 tubes
40W fluorescent	46 tubes	74 tubes	92 tubes
58W fluorescent	34 tubes	54 tubes	68 tubes
65W fluorescent	30 tubes	48 tubes	60 tubes

HID

Lamp Wattage	150w	250w	400w	1000w	2000w
Number of Lights (per LE 3.8 HID)	17	11	7	3	1

Continuously monitoring the mains voltage:
Switches out of economy when supply voltage drops to unacceptable level.

Continuously monitors the current:
Senses load change and switches out of economy to allow easy lamp striking. Minimum load change 12 x 36 watt tubes or, for extra sensitive version, 4 x 36 watt tubes.

Soft Switching
of the load from mains to economy voltage and vice versa is achieved by our unique microprocessor system.

Notes

1. Standard supply voltages are: Australia, UK 240 volts nominal (204-264V); New Zealand 230 volts (195-253V) and in Europe, India, SE Asia, Africa and parts of South America 220 volts nominal (187-242V). USA, Canada, Japan and parts of South America operating between 207 and 277 volts at 60 Hz can use Light Eco.
2. Please note the limiting factors in determining the load for each Light Eco unit. The exact quantity of lights depends on the light wattage, the system power factor and the system condition. Circuits must be Tong tested before installation.

Australian Technology Showcase

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