



4ft FLUORESCENT LAMPS

- At the commercial level, new high-efficiency T8 fluorescent lamp and electronic ballast systems can reduce total system wattage by over 45% relative to the use of older, less efficient T12 fluorescent lighting systems driven by magnetic ballasts.

Energy-efficient lighting upgrade projects can pay themselves back within 2-3 years and can deliver 30-50% returns on investment.

Cost of electronic ballast (G\$)	3,800
Cost of T8 tube (G\$)	800
Cost of installation (G\$)	500
Total Cost (G\$)	5,100
4 ft inductive ballast with lamp after 10 hours of operation (kWh)	0.483
4 ft electronic ballast with lamp after 10 hours of operation (kWh)	0.341
Energy saved per day (kWh/day)	0.142
Assuming annual operation (days/yr)	260
Energy Saved per year (kWh/yr)	36.920
Government Industrial Step 1 tariff (\$/kWh)	65.81
Energy Savings per year (\$/yr)	2,430
Avoided carbon dioxide emission per lamp per year (IPCC default value of 0.8kgCO ₂ /kWh for a diesel plant) (kgCO ₂)	29.54
Estimated value of 1 ton avoided carbon dioxide (\$US) =	5
Estimated value of 1 ton avoided carbon dioxide (\$G) =	1,030
Estimated value of 1 kg avoided carbon dioxide (\$G) =	1.03
Estimated value of avoided carbon dioxide emission per lamp per year (G\$) =	30
Total Benefits (Energy saving + Value of avoided carbon dioxide) (G\$) =	2,460
Simple Pay Back (yrs) =	2.07

- High frequency electronic ballasts or solid-state ballasts provide significant energy savings over magnetic ballasts.
- The electronic ballasts are quieter, lighter and virtually eliminate lamp flicker. One electronic ballast can power up to four lamps simultaneously (applicable for the double-lamps housing).
- When changing from magnetic to electronic ballasts, the T12 fluorescent tubes (1.5 inches) must be replaced with the narrower T8 (1 inch) tube for optimal performance and light output.



By changing your old 4FT inductive ballast and T12 tube to a new electronic ballast and T8 tube, you can save up to G\$2400 per lamp per year.



KNOW YOUR LIGHTING

A seemingly inconspicuous and often overlooked element within a building's infrastructure, lighting actually accounts for as much as 30-40% of a typical commercial building's energy costs and an opportunity for significant cost savings in today's competitive market.

Lighting technology has evolved tremendously over the past two decades and has resulted in the availability of a host of exciting, high performing and highly-efficient new lighting products.



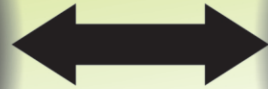
REPLACE OUTDOOR MERCURY VAPOUR LAMPS WITH COMPACT FLUORESCENT LAMPS (CFLS).

-USE OF PHOTOCELLS FOR OUTDOOR LIGHTING:

Mercury Vapour Lamp



Only requires a change of bulb and minor modification to the lamp wiring



Outdoor CFL

You can save as much as G\$ 30,000 per year for every replacement

Cost to operate 10 hours per day 365 days per year at G\$65.81 / kwh = G\$43,237

Cost of outdoor CFL and photosensor switch (G\$)	8,500
Cost of installation (G\$)	3,000
Total Cost (G\$)	11,500
175 Watt mercury vapour lamps after 10 hours of operation (kWh)	1.800
85 Watt outdoor CFL after 10 hours of operation (kWh)	0.430
Energy saved per day (kWh/day)	1.370
Assuming annual operation (days/yr)	365
Energy Saved per year (kWh/yr)	500.050
Government Industrial Step 1 tariff (\$/kWh)	65.81
Energy Savings per year (\$/yr)	32,908
Avoided carbon dioxide emission per lamp per year (IPCC default value of 0.8kgCO2/kWh for a diesel plant) (kgCO2)	400.04
Estimated value of 1 ton avoided carbon dioxide (\$US) =	5
Estimated value of 1 ton avoided carbon dioxide (\$G) =	1,030
Estimated value of 1 kg avoided carbon dioxide (\$G) =	1.03
Estimated value of avoided carbon dioxide emission per lamp per year (G\$) =	412
Total Benefits (Energy saving + Value of avoided carbon dioxide) (G\$) =	33,320
Simple Pay Back (yrs) =	0.35

Cost to operate 10 hours per day 365 days per year at G\$65.81 / kwh = G\$10,328

- Lights can be connected to a light sensitive switch so that they can be automatically turned on when it becomes dark and automatically turned off when it becomes bright again. This is useful for outdoor and security lighting that are used from dusk to dawn. A common mistake is to forget to turn off the outdoor lights, resulting in a waste of energy and unnecessary electricity cost.
- Photocells are usually incorporated with outdoor lamp fixtures, but sometimes become defective and need replacement.
- Some installations use regular fluorescent lamps for outdoor and security lighting which do not have light sensitive switches. These switches can be easily incorporated and can reduce electricity cost.



EDUCATE YOURSELF, KNOW YOUR LIGHTING