

**Incandescent lamps**



Tungsten Filament with Argon / Nitrogen gas mix

**Use** General lighting

**Advantages** Low initial cost

**Disadvantages** Highest energy user  
High percentage of energy is produced as heat  
Lamp life, average of 2500 - 5000 hrs depending of wattage, higher the wattage the shorter the life  
High maintenance costs

**Tungsten Halogen Lamps**



Tungsten Filament with Halogen gas

**Use** Spotlighting, floodlighting, displays and general lighting, popular in Kitchens

**Advantages** Whiter light than incandescents

**Disadvantages** More expensive than incandescents  
Higher percentage of energy is produced as heat  
Lamp life, average of 2000 - 5000 hrs  
Dimming can shorten the life  
High maintenance costs

**Energy Saving Lamps - Direct Replacement Lamps**

**Compact Fluorescent Lamps**



Electronic ballast to control the light  
Mercury / Argon gas mix, Tri-phosphor coating

**Use** General lighting

**Advantages** **Uses up to 75% less energy than incandescents or Halogens**  
Different colours available  
**Longer life than incandescents or Halogens , average of 8000 hrs**  
Produces little heat  
**Lower maintenance costs**  
Available in dimmable and non-dimmable versions

**Disadvantages** More expensive than incandescents  
Disposal issues

**LED (Light Emitting Diode) Lamps**



Electronic components only

**Use** Used for spotlighting, displays and general lighting

**Advantages** **Uses up to 80% less energy than incandescents or Halogens**  
Different colours available  
No Infra Red or Ultra- Violet radiation produced  
No mercury or lead used in the production of LED lamps  
**Environmentally safe, no disposal issues**  
**Longest life , average of 50,000 hrs**  
Produces minimal heat  
**Lowest maintenance costs of any of the above lamps**  
Available in dimmable and non-dimmable versions

**Disadvantages** Higher Initial cost but far lower running costs

**T12 Fluorescent tube**



1-1/2 inch dia tube  
Phosphor coated tube filled with a  
Mercury & Argon gas mix

**Use** General and display lighting

**Advantages** Life span, average of 13,000 hrs, longer than incandescent  
Low maintenance costs

**Disadvantages** Old style fluorescent tubes, needs a magnetic ballast  
some newer fittings have electronic ballasts  
Magnetic ballast produces heat, uses energy  
Light output rapidly decreases over time  
Different colours available  
Dimmed using special dimming ballasts, quoted separately  
Disposal issues, no longer made in USA

**T8 Fluorescent tube**



1 inch dia tube  
Tri-phosphor coated tube filled with a  
Mercury & Argon gas mix

**Use** General and display lighting

**Advantages** Life span, average of 15,000 hrs  
Uses less energy but produces more light than T12 tubes  
Lower maintenance costs  
Uses an electronic ballast, produces little heat  
Different colours available

**Disadvantages** Light output decreases over time  
Shorter life if used with T12 magnetic ballasts  
Dimmed using special dimming ballasts, quoted separately  
Disposal issues

**Energy Saving Lamps**

**T5 Fluorescent tube**



5/8 inch dia tube  
Tri-phosphor coated tube filled with a  
Mercury & Argon gas mix

**Use** General and display lighting

**Advantages** Life span, average of 20,000 hrs  
**Energy Savings of 30% (T12 tubes) and 12% (T8 tubes )  
but produces more light than T12 and T8 tubes**  
Only uses an electronic ballast, produces little heat  
Different colours available  
Lowest maintenance costs of all fluorescent lights

**Disadvantages** Dimmed using special dimming ballasts, quoted separately  
Disposal issues

**LED (Light Emitting Diode) tube**



Electronic components only  
No gas or phosphor coating

**Use** General and display lighting

**Advantages** Direct wire, requires no ballast  
No mercury or lead used in the production of LED lamps  
No Infra Red or Ultra- Violet radiation produced  
Different colours available  
**Longest life , average of 50,000 hrs**  
Produces minimal heat  
**Lower maintenance costs over fluorescent tubes**  
Available in dimmable and non-dimmable versions  
**Energy Savings of 55% (T12 tubes) and 43% (T8 tubes )  
Energy Savings of 35% (T5 tubes)**  
**Environmentally safe, no disposal issues**

**Disadvantages** Higher Initial cost but far lower running and maintenance costs