

Features	LED	Halogen
Safety, Health and Environment	<ul style="list-style-type: none"> - LED lights operate on 12 Volt. - No potential for electrical shock hazards to people or pets. - No broken glass hazard (LED lights are set in resin). - No Mercury in the LED unit or fitting. 	<ul style="list-style-type: none"> - Tungsten Halogen lights operate on 12 Volt. - No potential for electrical shock hazards to people or pets. - Possible broken glass hazard from lens or globe.
Energy Efficiency	<ul style="list-style-type: none"> - LED lights have up to 90% less power consumption than halogen or incandescent lighting. 	
Life of Operation	<ul style="list-style-type: none"> - LED lighting has a long life span - it can typically last up between 15 to 22 years or 10,000 to 100,000 operating hours, depending on the light fitting. 	<ul style="list-style-type: none"> - Typically Tungsten Halogen Lamps in an outdoor situation have an operational life of between 1,500 and 6,000 hours, depending on the brand of the light globe.
Cool/Hot Operation	<ul style="list-style-type: none"> - LED lights are safe for children, pets, plants and wildlife as very little heat is radiated. 	<ul style="list-style-type: none"> - Tungsten Halogen Lamps will generate high heat. This heat is radiated into the fitting which makes the fitting very hot to the touch. This is a safety consideration around children, pets and plants.
Ultra Violet Emission	<ul style="list-style-type: none"> - LED lights have a low UV emission rate. - Insects are not overtly attracted. - Fabrics and artwork will not fade. 	<ul style="list-style-type: none"> - Tungsten Halogen Lamps generate UV, which will attract insects and fade fabric and artwork over time.
Maintenance /Warranty	<ul style="list-style-type: none"> - LED lights do not have a globe to be changed. - Strong consideration should be given to whether the product is locally supported for any warranty claims. 	<ul style="list-style-type: none"> - Care and diligence should be taken when changing halogen globes to maintain an airtight/ watertight seal on light fitting. - Strong consideration should be given to whether the product is locally supported for any warranty claims.
Installation	<ul style="list-style-type: none"> - Due to the low Wattage required to operate LED lighting, generally one transformer is required and wiring is carried out with smaller cabling, assuming that all the lights are switched with one operation. 	<ul style="list-style-type: none"> - Transformer size is based on location and volt drop calculations. - Generally one transformer is required for each set of four light fittings. - Generally more 240 V electrical works are required to suit transformer positions. - Cable between fittings and transformers is larger and therefore harder to work with.

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Switching	- Manual, time clock, day light switch, remote control or a combination of all.	- Manual, time clock, day light switch, remote control or a combination of all.
DIY	- Lightscape Concepts & Design can provide installation instruction on a professional looking DIY LED lighting system. - DIY LED lighting kits are now available from Lightscape.	- Lightscape Concepts & Design can provide installation instruction on a professional looking DIY Halogen lighting system.
Waterproof	- Generally LED lights are waterproof and can be safely used in pools and water features.	- Tungsten Halogen fittings must be selected based on particular application, i.e. submerged in water.
Versatile Use	- LED lights can be used in various locations: Alfresco - Patio - Pool - Water Features - Decking - Driveways - Pathways - Stairs - Pillars - Carports - etc. - LED lights are generally physically smaller in size.	- Consideration should be given to placement regarding heat, glare, ease of maintenance and safety.
Visual	- LED lighting as a general rule has a soft glow with a low light output. - LED fittings are generally physically smaller and can be hidden within the plants.	- Tungsten Halogen lights have a sharp intense light output. - Halogen fittings are generally larger (due to heat dispersion) and are not easily disguised in plants.
Cost		
Fittings:	Imported: \$10 - \$50 per fitting Australian: \$40 - \$200 per fitting	Imported: \$20 - \$400 per fitting Australian: \$100 - \$400 per fitting
Transformers:	Average Quality: \$20 - \$150 Premium Quality: \$70 - \$220	Average Quality: \$20 - \$150 Premium Quality: \$70 - \$350
Cabling:	Average Quality: \$50 / 100 M Premium Quality: \$120 - \$200 / 100 M	Average Quality: \$100 - \$300 / 100 M Premium Quality: \$300 - \$800 / 100 M
240 V Requirements:	1 Outlet per transformer – 90 % of gardens using LED lighting would only require 1 transformer for the entire installation.	1 Outlet per transformer required – 90 % of gardens using Tungsten Halogen lighting would require 3 or 4 transformers to cover an average installation.
Operational Costs:	Average garden would require approx. 100 W to operate. This equates to approx. 1.5 cents per hours of running.	Average garden would require 1000 W to operate. This equates to approx. 15 cents per hour of running.
Sustainable Energy	- LED systems can be installed so they operate from solar panels.	

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Environmental Footprint	<p>100 % (Energy) = 10 % Heat + <u>90 % Light</u></p> <p>Smaller cabling required and less transformers = less Copper, less PVC (raw materials)</p> <p>No Mercury in light source</p>	<p>100 % (Energy) = 80 % Heat + <u>20 % Light</u></p> <p>Larger cabling and more transformers = more Copper, more PVC (raw materials)</p> <p>Possible Mercury in lamp source.</p> <p>Light fittings are physically bigger requiring more base metal (raw materials)</p>
Future Proofing	<p>LED is an expanding technology and is in current line with the WA Government commitment to lowering Greenhouse effects by 2010.</p>	<p>Halogen lighting is old technology and is being phased out in favor of energy efficient light sources (commitment of WA Government to lowering Greenhouse effects by 2010).</p>