Energy efficient lighting for your home

There are many different types of lighting available on the market but with a little research you can ensure that the lighting in your home meets your requirements, is energy efficient and looks good. In this brochure we provide you with the basic know-how and information about lighting so whether you’re doing a retrofit with existing fittings, renovating or building a new home you can find a lighting solution that suits you.

See the below for a table listing of some of the commonly used lighting terminology.

Incentives
Alice Solar City offers two financial incentives to Alice Springs residents to improve energy efficiency of household lighting. An incentive of up to $200 is available for the replacement of 12 watt halogen lights with energy efficient light bulbs and fittings (using LED or CFL globes). Secondly, an incentive of up to $20 is applicable for the purchase of CFL bulbs, LED bulbs and T5 fluorescent tubes and T8 converter kits.

Alice Springs businesses can also access financial incentives through Alice Solar City to undertake energy efficiency measures which could include changing the lighting. Visit the Smart Living Centre at 2/82 Todd Street or our website www.alicesolarcity.com.au for more information.

Phone: (08) 8950 4959

Energise tip for replacing halogen

If your house is full of low voltage halogen downlights in MR16 fittings (i.e. 12 watt fittings), your options to reduce energy consumption are to:

- replace the globes themselves with a LED light (i.e. with an MR16 base) - a good idea is to purchase one light to test, as LEDs generally do not give off the equivalent amount of light compared to a standard 50 watt halogen. Also, because LEDs consume far less electricity, it may also be necessary to change the transformer.
- replace the whole fitting (you’ll need an electrician to take out the transformer) with a GU12 (i.e. 240 volt) fitting and either CFL or LED globes.
- replace the current globes with a more efficient style of downlight (normal 50 watt halogen downlights can be replaced with newer 35 or even 20 watt IRC halogen). These lower wattage halogen lights require less electricity to produce a similar amount of light, or
- replace the entire light fitting and its fitting with a standard recessed light fitting (with either Edison Screw or Bayonet Cap ‘normal’ sized lamps). These should ideally be CFL lamps. Choosing CFLs will also enable you to choose special dimming CFL lamps for these fittings. NB. This would normally involve cutting your ceiling, as halogen light fittings are smaller than ‘normal’ sized recessed fittings. Funding through Alice Solar City is available for undertaking either of these measures.

* IRC or infrared coated halogen downlights use less electricity to provide the same amount of illumination as a higher wattage halogen.

Energy efficient lighting display
The wattage of a lamp indicates the amount of electricity it consumes - the higher the wattage, the higher it is running cost.

Voltage
Most lights operate on either 240 volt or 12 volt systems (i.e. low voltage). Just because it is low voltage doesn’t mean it is a low energy lamp. Downlights are typically 12 volt and use more than 50 watts compared to Compact Fluorescent Lamps (CFLs) which generally use around 20 watts or less. Low voltage lamps need a transformer to convert the main power from 240 volt electricity to 12 volt electricity - this can add around 30 watts to the total electricity consumption.

Incandescent
The incandescent light bulb is a type of lamp that works by incandescence (a general term for heat-driven light emissions) and are historically the most commonly used type of household lighting. The incandescent light bulb is a type of light that works by incandescence where electricity is converted to light. They are considered to be the future of lighting.

CFL
Compact Fluorescent Lamps (CFLs) are a type of fluorescent lamp. CFLs are designed to replace an incandescent lamp and can fit most existing light fixtures formerly used for incandescent lamps.

LED
A Light Emitting Diode (LED) is an electronic light source, electricity is converted to light. They are considered to be the future of lighting.

Utilities
Lamp lifetime refers to the average number of hours a particular lamp type is expected to function before replacement. Lamp colour is measured in Kelvins – ranges from 2700 Kelvin (very warm white) to 5000 Kelvin (cool white – which emits a ‘yellowy’ light) to 5000 Kelvin (cool white – which is soft, pure white light). There are many different types of lighting available on the market but with a little research you can ensure that the lighting in your home meets your requirements, is energy efficient and looks good. In this brochure we provide you with the basic know-how and information about lighting so whether you’re doing a retrofit with existing fittings, renovating or building a new home you can find a lighting solution that suits you.

All light globe images courtesy of Philips.
Lighting options

Compact Fluorescent Lamps (CFL)
Compact Fluorescent Lamps or CFLs have gradually become the most commonly used type of lighting in households and are generally either ‘bipin’ cap or ‘ Edison screw’ base. CFLs are also available as ‘downlights’ to replace halogen downlights (these are known as mini-CFLs). However in most cases, you will need to replace the existing light fitting as the lamps may not be the right size for your existing fittings and quite often halogen downlights only use 12 volt electricity (i.e. MR16 fitting whereas CFLs ( mini-CFLs) generally use 240 volt electricity (i.e. GU10 fitting).

CFLs are also now available for fittings where a dimmer switch is in use – look for lamps which specify they are able to be used with dimmer switches. These kits will mean that you can highlight a particular area such as a kitchen bench or feature wall. Although they are slightly more expensive than incandescent lamps, are still significantly higher energy users than CFL or LED lighting and thus are not recommended for most applications where efficiency is a priority.

Incorporating CFLs into your lights

- **Open nearby windows and doors to ventilate the room**
- **Wear disposable rubber gloves**
- **Use a brush to carefully sweep-up the pieces and then use a paper towel, preferably moist, to wipe up any remaining glass fragments and phosphor powders.
- **DO NOT use a vacuum cleaner because this can spread the contents of the bulb and contaminate the cleaner**
- **Place all of the pieces of the light bulb and clean-up materials into a sealed container (e.g. glass jar) for disposal in your waste bin or in accordance with the advice of your local waste disposal authority.**

What about the mercury in CFLs?

Compact Fluorescent Lamps contain small amounts of mercury, as do regular fluorescent tubes. The amount of mercury in the average CFL is very small – to the naked eye – it’s too small to measure exposure to an average person from a brief CFL is very low. You should still take care when clearing up any broken glass (check with your lighting retailer first) and they produce less heat compared with standard bulbs.

The range of applications for LEDs is increasing. A common use is as a replacement or alternative to traditional downlights. For example, they can be used as a straight replacement for downlights (either low voltage MR16 fittings, or 240 volt GU10 fittings are available). If you are considering replacing existing halogen downlights with LEDs, it is important to check the fitting is correct, that the globe will physically fit into the existing fitting, and that the amount of light that the LED produces is appropriate (the latter is particularly important as LEDs generally produce much less light than typical 50 watt halogen downlights that they are replacing). However, it should be noted that LEDs often produce a softer light with more ‘spread’, so achieving the exact light output may not be that critical. As production increases, the prices of LEDs are expected to come down significantly. LEDs come in an ever increasing range of shapes, sizes and fittings.

Other fluorescent tubes

Fluorescent tubes are often used in office buildings to provide internal lighting but are also used for external downlighting. Older T12 tubes with a diameter of 3/4” (one and a half inches) can sometimes be seen in particularly old fitting at your local hardware shops. Fluorescent tubes are still some of the most efficient lighting solutions available for many applications and tubes vary in shape (straight or circular), length and diameter.

T8 vs T5

Most of the fluorescent tubes currently in use are the traditional T8 tubes, where the diameter of the tube is 8/8” in diameter (1 inch). Newer T5 tubes, which are more efficient than T8 tubes are also available and have a diameter of 5/8” (five eighths of an inch). Although they are generally shorter in length than T8 lamps, Retrofit kits are available so you can replace T8 lamps with T5 lamps without having to replace the old fitting. These kits may however be more expensive than the T8 tubes. To save even more energy, replace the old fitting (which usually has a magnetic ballast) with a new electronically ballasted fitting, using the T5 tubes instead.

While fluorescent tubes have a bad reputation, the quality of light they produce has improved considerably, and they can be purchased with a range of ‘colours’ (i.e. warm or cool).

Light Emitting Diodes (LEDs)

LEDs are generally more expensive to buy compared to CFL, halogen or incandescent, but they use less energy. LED lamps range commonly from 2-20 watts and last longer (up to 45,000 hours). They work well when dimming (check with your lighting retailer first) and they produce less heat compared with standard bulbs. As production increases, the prices of LEDs are expected to come down significantly. LEDs come in an ever increasing range of shapes, sizes and fittings.

Halogen lamps

Halogen lamps, in particular downlights, have become increasingly popular over the years. Whilst they are available in 240 volt, low voltage halogen are the most common type found in households; bear in mind that low voltage doesn’t mean lower energy consumption. The transformer, which converts 240 volt mains electricity to 12 volt electricity for the lamp, also uses energy, so a 50 watt halogen lamp can use up to 60 watts once the electricity usage of the transformer is taken into account. Compare this to a CFL downlight, which can consume around 18-20 watts and provide almost as much light.

Although they are slightly more efficient than incandescent lamps and have a longer life time (generally 2,000 to 3,000 hours) they are not as energy efficient as LED lighting where they highlight a particular area such as a kitchen bench or feature wall. Because of this, halogen lamps need to be used in large quantities to be able to provide enough light for general room lighting. This in turn means that energy consumption significantly compared to a room lit with a fluorescent, LED or incandescent lighting.

Downlights can also be a fire hazard if not installed properly as they get a lot of heat, and they have been the cause of many house fires in Australia. There must be a gap between the fitting and any ventilation in the ceiling which in turn means ceiling insulation doesn’t work as effectively as it should.

Lighting options

Incandescent Lamps

Incandescent lamps have historically been the most commonly used type of lighting in households and are generally either ‘baselight’ or ‘impersonal screw’. They are considered to be relatively inexpensive to purchase initially, their expected lifetime is the shortest of all available lamps at around 1,000 hours. Incandescent lamps are also very inefficient converting less than 5% of the electricity they use into light – the remaining 95% is wasted as heat. Incandescent lamps are gradually being phased out in Australia and there are an increasing range of new lighting options available as direct replacements.

- PAR 38 CFL spotlight (bayonet cap base)
- Mini CFL downlight (GU10 base)
- Incandescent lamps have a lifetime of up to 15,000 hours and use around 80% less electricity than halogen lamps.

Compact Fluorescent Lamps

Compact fluorescent lamps or CFLs have gradually become more common and affordable and are available in a wide variety of shapes and sizes. They can usually directly replace any existing incandescent bulb (including the traditional outdoor spotlight) with an equal wattage CFL. Compact fluorescent lamps have a higher efficiency of around 50% to 80% than incandescent and halogen lamps. When changing from incandescent to CFL, you apply a 5:1 ratio – i.e. a 20 watt CFL is generally sufficient to replace a 100 watt incandescent.

- 240 volt LED downlight (GU10 base)
- Compact fluorescent lamps contain small amounts of mercury, as do regular fluorescent tubes.

Other Fluorescent Tubes

Fluorescent tubes are often used in office buildings to provide internal lighting but are also used for external spot lighting. Older T12 tubes with a diameter of 3/4” (one and a half inches) can sometimes be seen in particularly old office buildings. Fluorescent tubes are still some of the most efficient lighting solutions available for many applications and tubes vary in shape (straight or circular), length and diameter.

- 240 volt LED downlight (GU10 base)
- The energy consumption of fluorescent tubes varies in shape (straight or circular), length and diameter.

Halogen lamps

Halogen lamps, in particular downlights, have become increasingly popular. Halogen lamps come in two voltage types – 240 volt low voltage halogens are the most common type found in households; base in mind that low voltage doesn’t mean lower energy consumption. The transformer, which converts 240 volt mains electricity to 12 volt electricity for the lamp, uses energy, so a 50 watt halogen lamp can use up to 60 watts once the electricity usage of the transformer is taken into account. Compare this to a CFL downlight where you can consume around 18 watts and provide almost as much light.

- 5 Watt halogen downlight (MR16 base)
- Although they are slightly more efficient than incandescent lamps and have a longer life (generally 2,000 to 3,000 hours) they do not work as effectively as it should.

Light Emitting Diodes (LEDs)

Light Emitting Diodes or LEDs are semiconductor devices that convert electricity to light. The most recent development in modern lighting, they use different technology to incandescent and fluorescent lamps and are generally considered to be the future of lighting.

- 5 Watt halogen downlight (MR16 base)
- LEDs are generally more expensive to buy compared to CFL, halogen or incandescent, but they use less energy. LED lamps range from 2.2 watts and last longer (up to 45,000 hours).

What about the mercury in CFLs?

Compact fluorescent lamps contain small amounts of mercury, as do regular fluorescent tubes. The amount of mercury in the average CFL is very small – i.e. less than 5 milligrams – and the risk of mercury exposure to an average person from a broken CFL is very low. You should still take care when cleaning up if you break a CFL:

- The amount of mercury in the average CFL is very small – i.e. less than 5 milligrams – and the risk of mercury exposure to an average person from a broken CFL is very low.
- Place all of the pieces of the light bulb and clean-up materials into a sealed container (e.g. glass jar) for disposal in your waste bin or in accordance with the advice of your local waste disposal authority.

What about the mercury in CFLs?

Compact fluorescent lamps contain small amounts of mercury, as do regular fluorescent tubes. The amount of mercury in the average CFL is very small – i.e. less than 5 milligrams – and the risk of mercury exposure to an average person from a broken CFL is very low. You should still take care when cleaning up if you break a CFL:

- The amount of mercury in the average CFL is very small – i.e. less than 5 milligrams – and the risk of mercury exposure to an average person from a broken CFL is very low.
- Place all of the pieces of the light bulb and clean-up materials into a sealed container (e.g. glass jar) for disposal in your waste bin or in accordance with the advice of your local waste disposal authority.

Fluorescent tubes are generally more expensive to buy compared to CFL, halogen or incandescent, but they use less energy. LED lamps range from 2.2 watts and last longer (up to 45,000 hours).

- 5 Watt halogen downlight (MR16 base)
- LEDs are generally more expensive to buy compared to CFL, halogen or incandescent, but they use less energy. LED lamps range from 2.2 watts and last longer (up to 45,000 hours).
**Lighting options**

**Incandescent Lamps**

Incandescent lamps have historically been the most commonly used type of lighting in households and are generally either ‘bayonet cap’ or ‘edison screw’ base. They are cheap to purchase initially, their expected lifetime is the shortest of all available lamps at only around 1,000 hours. Incandescent lamps are also very inefficient converting less than 5% of the electricity they use into light – the remaining 95% is wasted as heat. Incandescent lamps are gradually being phased out in Australia and there are an increasing range of new lighting options available as direct replacements. For existing incandescent lamp fittings (e.g. glass jar) for disposal in your waste bin or in accordance with the advice of your local waste disposal authority.

**CFLs**

Compact Fluorescent Lamps (CFLs) or CFLs have gradually become more common and affordable and are now available in a wide variety of shapes and sizes. They can usually directly replace any existing incandescent bulbs (including the traditional outdoor spotlight) with ‘bayonet cap’ or ‘edison screw’ fittings and come in two main colours – cool and warm white. CFLs can have a lifetime of around 15,000 hours and use around 80% less electricity compared with incandescent and halogen lamps. When changing from incandescent to CFLs, you apply a 5:1 ratio – i.e. a 20 watt CFL is generally sufficient to replace a 100 watt incandescent. By simply changing any existing incandescent bulbs to CFLs you apply a 5:1 ratio – i.e. a 20 watt CFL is generally sufficient to replace a 100 watt incandescent. By simply changing any existing incandescent bulbs to CFLs you can cut your lighting energy use by 50% to 80%, which is a substantial saving on your lighting bill.

Fluorescent tubes are often used in office buildings to provide internal light but are also used for external wall lighting. Older T12 tubes with a diameter of 3/4” (one and a half inches) can sometimes be seen in particularly old-style fittings. Fluorescent tubes are still some of the most efficient lighting solutions available for many applications and tubes vary in shape (straight or circular), length and diameter.

70 vs 72

Most of the fluorescent tubes currently in use are the traditional T8 tube, where the diameter of the tube is 8/8” in diameter (1 inch). Newer T5 tubes, which are more efficient than the T8 tubes, are also available and use only a diameter of 5/8” (five-eighths of an inch), although they are generally shorter in length than T8 tubes. Retrofit kits are available so you can replace T8 lamps with T5 lamps without having to replace the old fitting. These kits are cheaper than T5 packs and the old fitting can be used to replace the new T5 tubes, which are around 20-30% more efficient than the T8 tubes. To save even more energy, replace the old fitting (which usually has a magnetic ballast) with a new electronically ballasted fitting, using the smaller T5 tubes.

While fluorescent lamps have a bad reputation, the quality of light they produce has improved considerably, and they can be purchased with a range of ‘colours’ (i.e. warm or cool).

**Other Fluorescent Tubes**

Fluorescent downlights are also now available – use the more efficient T5 tubes, which are around 20-30% more efficient than the T8 tubes. To save even more energy, replace the old fitting (which usually has a magnetic ballast) with a new electronically ballasted fitting, using the smaller T5 tubes.

While fluorescent lamps have a bad reputation, the quality of light they produce has improved considerably, and they can be purchased with a range of ‘colours’ (i.e. warm or cool).

**Halogens**

Halogens have, in particular, downlights, have become increasingly popular over the years. Whilst they are available in 240 volt, low voltage halogens are the most common type found in households; base in mind that low-voltage doesn’t mean lower energy consumption. The transformer, which converts 240 volt mains electricity to 12 volt electricity for the lamp, also uses energy, so a 50 watt halogen lamp can use up to 60 watts once the electricity usage of the transformer is taken into account. Compare this to a CFL downlight which you can consume around 18 watts and provide almost as much light.

Although they are slightly more efficient than incandescent lamps and have a longer lifetime (generally 2,000 to 3,000 hours) they use a lot more electricity lighting them. They need to be replaced every 1000 hours because, of this, halogen needs to be used in large quantities to be able to produce enough light for general room lighting. This in turn means that energy consumption increases significantly compared to a room lit with a fluorescent, LED or incandescent lighting.

In general downlights also need to be replaced every 1000 hours because, of this, halogen needs to be used in large quantities to be able to produce enough light for general room lighting. This in turn means that energy consumption increases significantly compared to a room lit with a fluorescent, LED or incandescent lighting. Downlights can also be a fire hazard if not installed properly as they generate a lot of heat, and they have been the cause of many house fires in Australia. There must be a gap between the fitting and any insulation in the ceiling which in turn means ceiling insulation doesn’t work as effectively as it should.

**LEDs**

LEDs are generally more expensive to buy compare to CFL, halogen or incandescent, but they use less energy, LED lamps commonly range from 2-20 watts and last longer (up to 45,000 hours). They can work with some dimmer switches (check this with your lighting retailer first) and they produce less heat compared with standard bulbs.

**Light Emitting Diodes (LED)**

Light Emitting Diodes or LEDs are semiconductor devices that convert electricity to light. The most recent development in modern lighting, they use different technology to incandescent and fluorescent lamps and are generally considered to be the future of lighting.

What about the mercury in CFLs?

Compact Fluorescent Lamps contain small amounts of mercury, as do regular fluorescent tubes. The amount of mercury in the average CFL is very small – less than 5 milligrams – with wide mercury exposure to an average person from a broken CFL is very low. You should still take care when cleaning any broken fluorescent lampholder as the mercury can escape. Be sure to check with your local waste management authority or at www.environment.gov.au/settlements/waste/lamp-mercury.html before disposing of any broken fluorescent lamp.

DO NOT use a vacuum cleaner because this can spread the contents of the bulb and contaminate the cleaner.

In use – look for lamps which specify they are able to be used with CFLs are also now available for fittings where a dimmer switch is able to provide enough light for general room lighting. This in turn means that energy consumption increases significantly compared to a room lit with a fluorescent, LED or incandescent lighting. Downlights can also be a fire hazard if not installed properly as they generate a lot of heat, and they have been the cause of many house fires in Australia. There must be a gap between the fitting and any insulation in the ceiling which in turn means ceiling insulation doesn’t work as effectively as it should. LEDs are generally more expensive to buy compare to CFL, halogen or incandescent, but they use less energy, LED lamps commonly range from 2-20 watts and last longer (up to 45,000 hours). They can work with some dimmer switches (check this with your lighting retailer first) and they produce less heat compared with standard bulbs.

The range of applications for LEDs is increasing. A common use is as a replacement or alternative to traditional downlights. For example, they can be used as a straight replacement for downlights (either low voltage MR16 fittings, or 240 volt G13 fittings are available). If you are considering replacing existing halogen downlights with LEDs, it is important to check the fitting is correct, that the glass will physically fit into the existing fitting, and that the amount of light that the LED produces is appropriate (the latter is particularly important as LEDs generally produce much less light than typical 50 watt halogen downlights that they are replacing). However, it should be noted that LEDs often produce a softer light with more ‘spread’, so achieving the exact light output may not be that critical.

As production increases, the prices of LEDs are expected to come down significantly. LEDs come in an ever increasing range of shapes, sizes and fittings.
The wattage of a lamp indicates the amount of electricity it consumes – the higher the wattage, the higher the running cost.

**Voltage**
Most lights operate on either 240 volt or 12 volt (often referred to as low voltage). Just because it is low voltage doesn’t mean it is a low energy lamp. Low voltage downlights are basically 12 volt and can use more than 50 watts compared to Compact Fluorescent Lamps (CFLs) which generally use around 20 watts or less. Low voltage lamps also need a transformer to convert the mains power from 240 volt supply to 12 volt electricity – this can add around 30 watts to the total electricity consumption.

**Incandescent**
The incandescent light bulb is a type of light that works by incandescence (a general term for heat-driven light emissions) and are historically the most commonly used type of household lighting.

**CFL**
Compact Fluorescent Lamps (CFLs) are a type of fluorescent lamp. CFLs are designed to replace an incandescent lamp and can fit into most existing fittings formerly used for incandescent lights. CFLs are more energy efficient and last longer than incandescent lights but they emit more heat.

**LED**
A Light Emitting Diode (LED) is an electronic light source, where electricity is converted to light. They are considered to be the future of lighting.

**Voltages**
Where electricity is concerned to light, they are commonly referred to as 240 volt or 12 volt (i.e. 12 volt fittings), your options to reduce energy consumption are to:

- replace the current globes with a more efficient style of downlight (with either Edison Screw or Bayonet Cap type fittings). These should ideally be CFL lamps.
- replace the entire halogen light and its fitting with a standard recessed light fitting with either Edison Screw or Bayonet Cap type fittings.

**Low energy**
Low energy lamps are also known as ‘downlights’. The term downlight refers to lights that are usually recessed ceiling fittings that shine downwards. The most common examples are small lights (sometimes referred to as downlights), usually operating on 12 volt electricity, however normal downlight fittings using incandescent lights and CFLs are also common.

**GU10 / MR16**
GU10 and MR16 are two types of light fittings commonly used for small lights in downlight applications (these can be either halogen, CFL or LED globe). GU10 fittings are smaller than MR16 fittings, but are designed to work with low voltage and incandescent halogen downlights (i.e. 12 volt fittings). MR16 fittings also have two small pins that look like the head of a nail. Lights with MR16 fittings can be 22 volt (in which case a transformer is needed) or 12 volt (in which case a transformer is not needed). MR16 fittings also have two small pins and look like the sharp end of a nail. They are not interchangeable – in other words, it is not possible to use a light with MR16 pins in a GU10 fitting.

**Colour**
Lamp colour is measured in Kelvin – ranging from 2700 Kelvin (warm white – which emits a ‘yellowy’ light) to 5000 Kelvin (cool white – which is soft, pure white light). There are about 12 different levels of light fixture that you can choose from. The warmer your light is, the softer and more relaxing it looks.

**Retrofit tip for replacing halogens**
If your house is full of low voltage halogen downlights in MR16 fittings (i.e. 12 volt fittings), your options to reduce energy consumption are to:

- replace the globes themselves with a LED light (i.e. with an MR16 base) – a good idea is to purchase one light to test, as LEDs generally do not give off the equivalent amount of light compared to a standard 50 watt halogen. Also, because LEDs consume far less electricity, it may also be necessary to change the transformer.
- replace the whole fitting (you'll need an electrician to take out the transformer with a GU12 (i.e. 240 volt) fitting and either CFL or LED globes).
- replace the whole globes with a more efficient style of downlight (normal 50 watt halogen downlights can be replaced with newer 15 or even 20 watt IRC halogen globes). These lower wattage halogen lamps cost more than the standard 50 watt globes, but use between 30% and 60% less electricity and produce a similar amount of light, or
- replace the entire halogen light and its fitting with a standard recessed light fitting with either Edison Screw or Bayonet Cap type fittings. These should ideally be CFL lamps. Choosing CFLs will also enable you to choose special dimming CFL lamps for these fittings.
- replace the entire halogen light and its fitting with a standard recessed light fitting (with either Edison Screw or Bayonet Cap type fittings). These should ideally be CFL lamps. Choosing CFLs will also enable you to choose special dimming CFL lamps for these fittings. NB. This would normally involve cutting your ceiling, as halogen light fittings are smaller than 'normal' sized recessed fittings.

IRC or infrared coated halogen downlights use less electricity to provide the same amount of illumination as a higher wattage halogen. They are approximately the same size as a 25 watt halogen, but use between 30% and 50% less electricity. IRC or infrared coated halogen downlights are available for both GU10 and MR16 fittings.

Costs vary depending on the Smart Living Centre fitting selected. (See inside for a table listing of some of the commonly used lighting terminology.)

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