




















Commonly used lighting symbols and what they mean

	Class 1 240 volt the fitting requires a connection to earth		Minimum distance from illuminated surface 0.3m Distance depends on wattage and reflector. Usually only used for products with reflectors built in or MR16, GU10. Ensure light source is not too close to surfaces causing them to overheat.
	Class 2 240 volt 2 core double insulated - no earth connection required		Replace broken protective glass (either round or rectangular). Some halogen and metal halide bulbs require a protective shield to offer protection should the bulb shatter. The shield must be replaced if broken to maintain security.
	Class 3 12 volt extra low voltage		Self shield lamp Warns that the use of glass fronted MR16, GU10 or low pressure capsule lamps must be used.
	'F' marked - mounting surface of fitting will not exceed 90°C. Suitable for mounting on flammable surfaces.		
	'FX' marked - mounting surface of fitting can exceed 90°C. Not suitable for mounting on flammable surfaces.		



Bulb types: incandescent and energy saving

Note: Energy saving bulbs are available in the standard cap sizes to fit most light fittings (BC/B22, SBC/B15, ES/E27, SES/E14 and in GL5, candle and stick shapes), but the overall dimensions can differ slightly due to the width and height of the tubes. It is advised to test for fit before purchase.



	BC/B22 GLS bayonet cap general light service		SBC/B15 GB small bayonet cap golf ball		ES/E27 GLS Edison screw general light service		SES/E14 GB small Edison screw golf ball
	BC/B22 GB bayonet cap golf ball		SBC/B15 CNDL small bayonet cap candle		ES/E27 GB Edison screw golf ball		SES/E14 CNDL small Edison screw candle
	BC/B22 CNDL bayonet cap candle				ES/E27 CNDL Edison screw candle		SES/CNDL OSRAM small Edison screw energy saving halogen cap candle


Fitting energy saving bulbs into your existing fitting will give you a more energy efficient fitting.

Bulb types: 12v halogen

	MR16 12 VOLT Dichroic reflector (heat backwards) Aluminium reflector (heat forwards) Available in 20, 35, 50W Beam angles 10° - 60°
	G4 Available in 10W, 20W, 35W, 50W



Bulb types: mains halogen


	GU10 Aluminium reflector (light & heat forward) GZ10 Dichroic reflector (light forward, heat back) Available 35-50W Beam angles 25° - 38°
	G9 Available as 25, 40, 60, 75W

	Linear halogen: 78mm - 60, 100W 118mm - 150, 200, 300W
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NOTE: always observe the maximum wattage rating on the fitting

Bulb types: low energy fluorescent

	Compact fluorescent: Available with built-in ballast with ES or BC fitment for replacement of GLS bulbs. Ideal for lights that will be left on for long periods, i.e. outside, hall or porch lights.
	2D: GR8 = 2 pin = 16W GP10q = 4 pin = 28, 38W Requires special fittings with built in ballasts. Fixed wattage cannot be changed.

	PL lamps: G24d-1, G24d-2, G24d-3 (d = duo = 2 pin) G24q-1, G24q-2 (q = quatro = 4 pin) Available 10 - 26W Requires special fittings with built in ballasts. Fixed wattage cannot be changed.
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Dual Mount





Products shown with this symbol can be adapted and the chain removed, so the Pendant can be fitted directly to the ceiling. Full instructions are included with each product. We recommend that conversion is carried out by a qualified electrician upon installation.




Lightbulb types

Energy Saving Options:

There are an increasing number of alternative 'energy saving' lamps available. Depending on the type of lamp, the energy saving potential and type of light emitted is different – this guide provides a summary of some popular types.



Dedicated Low Energy: The fittings marked with symbols (LI & L2) throughout the catalogue are only suitable for dedicated low energy lamps. The fittings themselves contain control gear which is designed to operate 'pin based' fluorescent lamps. These lamps have unique lampholder types which are only suitable for the type of lamp detailed in the specification. They come in several different shapes dependant on the lamp holder. (, , , ). They consume around 20% of the energy used by a conventional incandescent (GLS) lamp and have a life of between 10 & 15 times longer (dependant on specific lamps).

Retro Fit Low Energy (Self ballasted lamps): This type of lamp is available to suit many of the common lampholder types (BC, ES, SES, GU10) and is suitable for use in many of the fittings. It is a fluorescent lamp, similar in operation and energy saving to the dedicated low energy lamps but with the control gear housed within the lamp itself. This allows them to be fitted in fittings designed for use with conventional GLS lamps. They are available in a variety of shapes and sizes of varying wattages. (, , )
A guide for comparable wattages can be found below.

Wattage Comparison

Incandescent Lamp	Retro Fit Lamp (Self Ballasted)
25 Watt	5 - 7 Watt
40 Watt	8 - 10 Watt
60 Watt	11 - 14 Watt
75 Watt	15 - 17 Watt
100 Watt	18 - 22 Watt
150 Watt	23 - 27 Watt

The type of light will vary dependant on the 'colour temperature' of the lamp - a lamp marked 827 (or 2700k) will produce a warm light, similar in appearance to a conventional GLS whilst an 835 (3500k) will produce a colder light which may be more suitable for some contemporary fittings. Lamps with a colour temperature above 5000k are referred to as 'daylight' and give excellent colour rendering suitable for task lighting.

NOTE: This type of lamp is not suitable for use on products which have touch dimmers or which are intended to be dimmed.

Low Voltage Products:

Electronic Transformers: A dimmer switch suitable for trailing edge (also described as phase lagging) is most likely to be compatible. This information is included in instructions for the appropriate products.

Toroidal Transformers: A dimmer switch suitable for inductive loads must be selected

Dimmer Switches:

A dimmer switch is a third party accessory and compatibility with our products is not guaranteed. These notes are for guidance only. For further advice, please contact a qualified electrician or the manufacturer of the dimmer switch you intend to use.

DO NOT USE dimmer switches on products which contain fluorescent lamps (including fluorescent 'energy saving' lamps).

Please note that buzzing from the transformer is frequently caused by the **dimmer switch** - this may be because the wrong type of dimmer switch has been selected but it is quite normal for there to be some buzzing from either the dimmer switch or the transformer of any item being dimmed. A slight buzz is not indicative of a problem with the fitting or dimmer, it is a normal by-product of dimming the item. A more serious buzzing is almost always a result of using an incompatible/incorrect dimmer.

Mains Voltage Halogen (GU10, G9 and R7s):

Many dimmer manufacturers recommend that the rating of the dimmer switch is reduced when these lamp types are dimmed. The following is a guide to the revised loads recommended:

Maximum Load on Dimmer Switch Rating Label	Maximum Load to be applied when using Mains Voltage Halogen
250W	150W
400W	250W
1000W	500W

Energy Efficiency:

Lamp Phase Out Regulations

There has recently been a new directive from the EU which will result in the gradual phase out of some lamp types. Primarily the Directive affects 'traditional' GLS/ Candle & Golfball type lamps but there are other lamp types affected. There are some new types of lamps available as replacements for some of those lamps affected. The proposed phase out is expected broadly to affect the following:

September 2009 - All 'non-clear' (this means frosted, pearl etc) lamps will have to have an energy efficiency rating of 'A'. Currently this means that the only non-clear lamps available will be fluorescent types. Lamps affected include mains voltage GLS, Golfball, Candle, G9 and Low voltage GY6.35 & G4 in all wattages. Also in September 2009, clear lamps over 80W will need to have an energy efficiency rating of at least 'C'. This effectively bans all existing GLS lamps of more than 80W and requires the use of 'new technology' lamps for R7s linear halogens (which have a 'C' rating).

September 2010 - clear lamps over 65W will need to have an energy efficiency rating of at least 'C'. This effectively bans all existing GLS lamps of more than 65W. This will also affect 60W G9 lamps (as their actual light output is more than a 65W GLS) which will also need to be 'C' rated (there are some new G9 lamps now available which meet this requirement).

September 2011 - clear lamps over 45W will need to have an energy efficiency rating of at least 'C'. This effectively bans all existing GLS, Candle or golfball lamps of more than 45W.

September 2012 - clear lamps over 7W will need to have an energy efficiency rating of at least 'C'. This effectively bans all existing GLS, Candle or golfball lamps of over 7W - it also means all ratings of G9 must be at least 'C' rated (already available).

September 2013 - A number of performance improvements for various lamp types will be introduced, then in **September 2014** The Commission will review the requirements of the regulations and make any additional recommendations.

New Technologies:

Due to phase out proposals, a number of new lamps have become (and will continue to become) available. These fall broadly into two categories:

1. Compact Fluorescent (CFL)

These lamps are the most energy efficient option, typically emitting 4 times the amount of light of a traditional GLS lamp (therefore only consuming a 1/4 of the power for the same amount of light). These lamps are a good choice for table lamps and ceiling pendants with soft shades where the lamp is not directly visible. They are not suited to more open fixtures, particularly those with crystal as the frosted nature of the lamp envelope does not provide the necessary 'sparkle' to crystal.

The modern CFL has few of the drawbacks of its predecessors - the light quickly gets to its maximum output (usually within a few seconds) and many are designed to closely approximate the size and shape of the GLS lamps they replace. Typically a lamp with a colour temperature of 2700K (may appear as 827 on the packaging) will be very similar in appearance to a traditional GLS.

Much of the information you may have read in the media is based on 'older' technologies and does not accurately reflect current technologies. In fact, in April of 2008 the Energy Saving Trust conducted a 'light bulb challenge' at Bluewater shopping centre in Kent.

Each shopper was shown into two identical booths - one lit with an energy saving light bulb, the other lit with a traditional one. Before they took the challenge they were asked whether they thought they could tell the difference between energy saving and traditional light bulbs. Confidently, nearly 7 out of 10 (68%)

believed they could. 761 then agreed to be put to the test. Slightly less than half (47%) got it right and 53% either got it wrong or couldn't spot a difference. With no real statistical difference showing, this means the energy saving lighting looks just like traditional lighting. Perhaps more surprisingly, when asked which lighting they preferred, the majority - 2 in 3 (64%) preferred the energy saving lighting, or didn't have a preference. Only 36% preferred the lighting of the traditional bulb.

When using compact fluorescent lamps in place of conventional GLS the following table provides a guide to the equivalent wattages:

Ordinary Bulbs	Energy Saving Equivalent
25W	6W
40W	8-11W
60W	13-18W
100W	20-25W

Some manufacturers now label their CFLs with a 3 digit code to specify the colour rendering index (CRI) and colour temperature of the lamp. the first digit represents the CRI measured in tens of percent, while the second two digits represent the colour temperature measured in hundreds of kelvins. For example, a CFL with a CRI of 83% and a colour temperature of 2700k would be given a code 827.

2. Energy Savers

These lamps are improved, halogen versions of popular lamps affected by the phase out - primarily GLS and Candle. These lamps are clear (as frosted lamps were banned in the first phase in september 2009) and typically contain a small halogen capsule inside a traditional 'envelope' (the glass bowl).

they give the same light output as the lamps they are designed to replace but consume less power (watts). So, for example, a lamp designed to replace a 40w candle lamp will typically consume 28w, a 60w GLS replacement would consume around 42w.

This represents an energy saving of around 30% - whilst not as efficient as the 80% saving offered by CFL's, it is still a substantial energy saving and offers other advantages. The clear lamp envelope means that these lamps are well suited to traditional chandelier type

fittings with crystal decoration as the halogen light source will cause the crystal to sparkle.

There are already versions of these lamps available as replacements for GLS, Candle, G9 and R7s (linear halogens) and they improve the energy efficiency rating sufficiently to survive the phase out until at least 2012 and in some cases 2016 (the R7s and G9 versions of these lamps will survive past 2016 as they are the most efficient versions that current technology will allow).

Please note - throughout the catalogue you will find that many fittings are still shown as '100W'. This is a maximum rating (meaning lower wattages are fine). We have continued to use this rating despite the fact that GLS will no longer be available in this wattage as it makes it easier to select an appropriate energy saving equivalent. Your retailer can advise you on the selection of appropriate lamps for use with all of the fittings contained within the catalogue.

Lighting your home

General Tips:

- Lighting should make our homes comfortable and inviting to enable you to make the best use of the space you have.
- A good general light source is needed in most rooms. This can be supplemented by task lights such as spot lights or desk lamps. In addition, wall lights and uplighters can accent highlights such as pictures and plants.
- Consider a crystal chandelier or other statement piece. Low ceiling rooms may need a flush or semi-flush light.
- Halls and staircases often need a low hanging light with longer cable or chain
- Wall lights are an excellent way of providing soft, low-level light, creating atmosphere and warmth.
- Floor lamps can be useful in providing pools of light and are an attractive way of brightening up darker areas.
- Bathroom lighting should be both practical and stylish and comply with safety regulations related to the installation.

Entrances, Halls & Staircases

Entrances

Entrances should be warm and welcoming - the lights used here can often be left burning for long periods, so use energy saving bulbs.

Halls

A hanging pendant can be used in a larger room or consider wall lights or recessed downlights if the ceiling is low or the hall is narrow. A table lamp on a side table with mirror above can add extra interest.

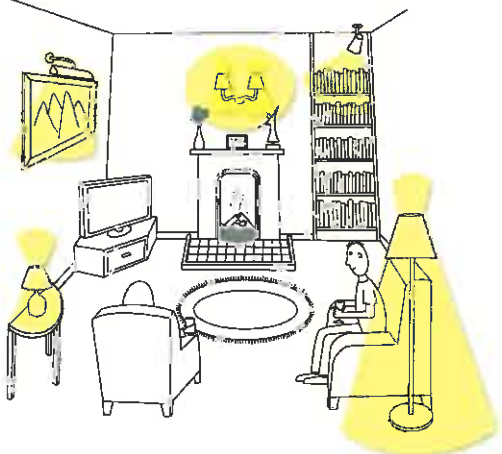
Staircases

Staircases should be well lit and the light directed to define the edges of the steps. A bright pendant lamp hanging at the top of the stairs will create a shadow that adds definition to the stair risers. This is another area where you might want to consider using an energy saving bulb.

Landings

Often small areas with heavy traffic, flush fittings or recessed downlights can maximise space. Dimmer switches can be used to turn down light to a low level at night.

Living Room



- The living room will need a variety of lighting for the space to work best. A combination of general overhead or wall lighting, as well as portable light sources such as table, floor or task lamps.
- A ceiling fitting will probably be the main light source. For larger rooms with high ceilings multi-arm lights, available with five, eight or more, bulbs. For smaller rooms, up to 5x4m, a three-arm light should be sufficient. Semi-flush or flush fittings are perfect for low ceilings, and many of our fittings are height adjustable.

- Wall lights are a good source of additional lighting, whether focused up, down or in both directions.
- Accent lighting hidden behind cornices, bookshelves and glassware displays. Highlight pictures and paintings with a picture light and use spotlights to highlight plants and ornaments. Uplighters are ideal for a dark corner. When watching television a soft ambient light is recommended as an aid to relaxed viewing.

Dining Room



- Dining room lighting needs to be flexible. The main source will be above the table - you may also need additional wall lighting or portable table lamps. A rise and fall lamp provides a practical way to light the table while a pendant light, armed light or chandelier can be used to provide a central focus, even when switched off. A floor standing arc light looks great over a dining table and creates an effective solution that doesn't require any wiring.
- Use dimmable styles to alter the mood of the room and consider hanging a multi-arm pendant or several single pendants over a table. Cable lengths can usually be adjusted at installation.

Kitchen

- The kitchen is the functional centre of a home and to ensure safety where liquids, hot objects and electrical appliances are used, a higher level of light is required.
- A central light will give a good distribution of light - or a multi-head spot light bar will allow light to be directed over the sink, oven and fridge areas. A pendant can be used over a table or recessed

downlighters over a kitchen breakfast bar. Portable lighting with trailing flexes can be hazardous and should therefore not be used.

- Under cupboard fluorescent lights can be used to illuminate work surfaces.

Home Office



- General lighting can be supplemented by wall lights and uplighters.
- A good task lamp is essential with an adjustable arm, a bright, focused light and an accessible on/off switch. If space is at a premium, consider a Mother & Child style lamp - combining an uplighter with a task lamp.

Bedroom



- The main source of light could be a dimmable ceiling fitting. Touch base table lamps beside the bed allow varying levels of brightness.
- Wall mounted lamps with an adjustable reading arm are useful as are 2 slim table lamps on a dressing table.
- Consider a statement piece such as a chandelier.

Children's Bedrooms

- Lighting for children's rooms should be safe, bright and colourful.
- Bright, general lighting will be needed plus a task lamp for use on a desk.
- Wall and ceiling lights add general lighting.

Bathroom

- Bathroom lighting needs to be functional and safe. the bathroom is divided into three zones, 0, 1 and 2. (see diagram on page 221) to determine likely exposure to water. Each fitting is given an IP (Ingress Protection) rating which relates to its water resistance. Only light fittings suitable for the relevant zone should be used. Avoid lighting which is too bright as the polished surfaces may cause glare; diffused wall or ceiling lights are better. The main light should be switched on by a pull cord or a light switch situated outside the bathroom. Glass or ceramic lights are best. It is wise to avoid those containing wood, leather or fabric as they can degrade in a humid atmosphere.
- Bathroom lights with opal-effect glass provide a soft diffused light. Glass shades are an ideal choice and won't deteriorate in a humid atmosphere.
- Being able to see well when shaving or applying make-up is essential. Consider a well-illuminated mirror with low energy bulbs or a light over a mirror to provide a strong pool of well-directed light.

Outdoor Lighting

- Outside lighting is IP-rated: the higher the rating, the more resistant the fitting is to the elements. All external lights should be waterproof, durable and compliant with safety regulations related to the installations.
- As outdoor lights are often left on for many hours, energy saving bulbs should be used where possible.

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We spend most of our time in the kitchen and it is a room in which many functions are carried out.

Safety is paramount where hot liquids, hot surfaces and electrical machinery are being used so the kitchen requires a higher level of light than any other room in the house.

A more even distribution of light is required in the kitchen and a central light or multi-head bar with halogen lights will be instrumental in achieving this. An alternative is the use of halogen downlighters mounted within the ceiling.

Use lights specifically designed to be fitted under cupboard units to illuminate work surfaces. It is important that these lights run cool particularly where food is being stored in the cupboard above. Typically, under cupboard lights are of the fluorescent type. Above all make sure the light falls on the work surface and avoid working in your own shadow. If you have glass fronted cabinets consider the use of small halogen display lights to add interest.

If the kitchen is also used for dining it will improve the atmosphere if any fluorescent lights can be switched off leaving a lower level of halogen lighting.

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