Guide to Light Fittings, Caps and Bases

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4 August 2014

What Are the Different Types of Light Bulb Fittings, Caps and Bases?

The part of the lamp or light bulb that connects into the light fitting is generally known either as the “cap” or “base”.

Caps provide the electrical contact to conduct electricity to the light bulb but it also helps to secure the light bulb into its fitting.

There are a vast variety of caps and bases that exist in order to help make sure that only the correct type of lamp is used in any given fitting. This section shows many of the most popular fittings.

Bayonet Cap

BC-B22d Cap

- Diameter: 22mm
- Diameter (Pin to Pin): 27mm
- Height: 26mm

With its familiar “push and twist” action, the “bayonet cap” (also known as BC or B22d cap) is used on most regular light bulbs. It is 22mm in diameter and with two locating lugs.

SBC-B15d Cap

- Diameter: 15mm
- Diameter (Pin to Pin): 17mm
- Height: 26mm

The “small bayonet cap” (SBC or B15d) is very similar but only 15mm across.

Although generally used for mains voltage lamps, the SBC fitting can also be found in a very small number of specialist low voltage halogen lamps.

There are also many other bayonet cap variants including the 3-pin BC B22d-3 sometimes used on Fireglow lamps but perhaps more commonly on High-pressure mercury lamps for industrial applications. The BY22d is used on some low-pressure sodium (SOX) lamps.

Edison Screw Cap

Named after the pioneering inventor Thomas Edison, the Edison Screw cap or “ES” lamp fitting is used worldwide in a vast range of applications.

ES-E27 Cap

- Diameter: 27mm
- Height: 26mm

The most popular ES or E27 fitting is 27mm diameter and is widely used in UK and Europe. This cap is the standard 27mm diameter screw cap for UK 240V light bulbs – not to be confused with E26, which is a 26mm size and is designed for the 120V US market.

SES-E14 Cap

- Diameter: 14mm
- Height: 26mm

The SES or “Small Edison Screw” cap is often used for smaller decorative fittings, chandeliers, and appliance light bulbs – It has a diameter of 14mm and is predominantly used in the UK and Europe.

There are also many size variations, mainly for use in specialist fittings. The MES-E10 fitting is sometimes used in large chandeliers containing perhaps dozens of small lamps.

Designation	Diameter	Name	Abbreviation
E5	5mm	Lilliput Edison Screw	LES
E10	10mm	Miniature Edison Screw	MES
E12	12mm	Candelabra Edison Screw	CES
E14	14mm	Small Edison Screw	SES
E27	27mm	Edison Screw	ES
E40	40mm	Giant Edison Screw	GES

Capsule Lamps

Miniature halogen capsule light bulbs are generally used in integrated fittings and appliances, such as cooker hoods and kitchen cabinet lights.

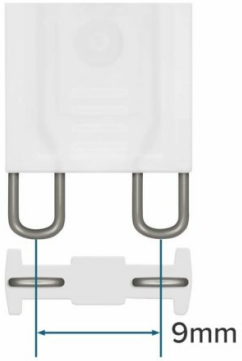
Capsule light bulbs can be identified by their miniature size and they all have 2-pins extruding out of the base of the capsule. The model of the capsule is designated by the measurement in mm between these two pins.

The different distances between the pins prevent the wrong type of capsule light bulb being inserted into the wrong fitting – such as a 12V G4 capsule being inserted into a 240V G9 light fitting.

G9 Base

Distance Pin (Centre) to Pin (Centre): 9mm

The G9 is specifically used for 240V capsule light bulbs. The light bulb can be identified by measuring the distance between the centre points of the pins. The distance of a G9 measures 9mm.



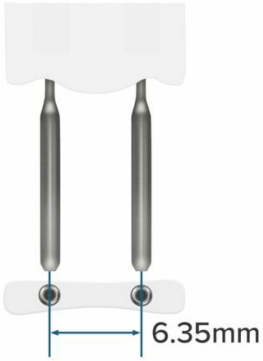
G4 Base

Distance Pin (Centre) to Pin (Centre): 4mm

The G4 is specifically used for 12V capsule light bulbs. These capsules require a 12V transformer or driver to operate – this is usually built into the fitting. The capsule can be identified by measuring the distance between the centre points of the pins. The distance of a G4 measures 4mm.

GY6.35 Base

Distance Pin (Centre) to Pin (Centre): 6.35mm



The GY6.35 is specifically used for 12V/24V capsule light bulbs. These capsules require a 12V transformer or driver to operate – this is usually built into the fitting. These capsules are often used for task lighting. The capsule can be identified by measuring the distance between the centre points of the pins. The distance of a GY6.35 measures 6.35mm.

LED Capsule Bulbs are now also available as an energy-efficient alternative to halogen light bulbs. The fitments on LED capsules are exactly the same as those on halogen capsules, so if you're replacing your current light bulbs with LED light bulbs and your fitting accepts one of the standard types listed here, you should be able to install them without an issue.

Linear Halogen

R7s Fitting

- Cap Diameter: 7mm
- Cap Length: 5mm
- Bulb Length: 78mm/117mm

Linear Halogen light bulbs for floodlights and up-lighters have a 7mm R7s cap at each end of a long quartz linear light bulb. All linear halogen light bulbs have the same cap but come in either 78mm lengths or 117mm length light bulbs. They also come in a variety of wattages, so it is important that a replacement linear halogen is like-for-like (same wattage, same length).

Halogen and LED Spotlights

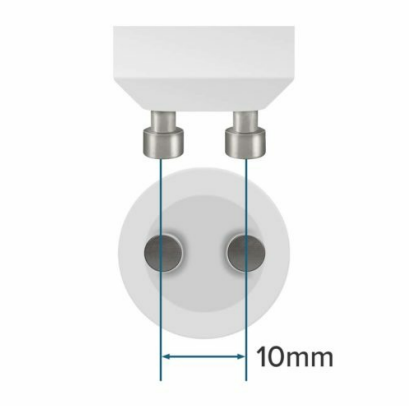
The most common halogen spots are either push fit (GU4/MR11 or GU5.3/MR16), low voltage type or twist and lock (GU10 or GZ10) mains 240V versions.

Spotlight bulbs can be identified by measuring the distance in mm between the centre of the two pins that extrude from the base of the spotlight.

The different distances between the pins and the size of the pins prevent the wrong type of

spotlight being inserted into the wrong fitting.

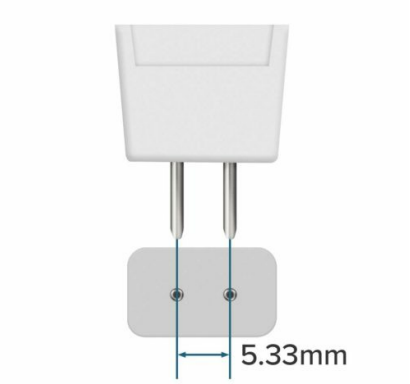
GU10 Cap



- Type: Twist and Lock
- Distance Pin (Centre) to Pin (Centre): 10mm

Featuring two pins that twist and lock the spotlight into the fitting, the GU10 is the most popular spotlights used in the UK. This spotlight is mains operated 240V and was initially developed as a halogen spotlight but is nor widely available in LED. Various wattages, colours and beam angles can now be purchased to provide lighting in many different applications.

GU5.3/MR16 Cap



- Type: Push Fit
- Distance Pin (Centre) to Pin (Centre): 5.3mm

This base of this lamp is technically named GU5.3, however, the whole spotlight is more commonly referred to as an MR16. Featuring two round pins that push into the fitting, this is the 2nd most popular type of spotlight. The MR16 spotlight operates at 12V so requires a 12V transformer or driver to run- these drivers are sometimes built into the fitting but can also be purchased separately.

GZ10 Cap

The GZ10 spotlight looks very similar to the GU10 lamp, but there are two major differences. The GZ10 spotlight makes use of a dichroic reflector to direct all of the heat generated by the spotlight backwards, creating a cool beam spotlight. The GZ10 spotlight, therefore, features a square corner base (where the GU10 has a bevelled base). This stops the GZ10 being used in a light fitting designed for a GU10 where this backwards reflected heat could damage the fitting. Note: although a GZ10 cannot be used in a GU10 fitting, a GU10 can be used in either a GU10 or GZ10 fitting.

Fluorescent Tubes and LED Tubes

Fluorescent and LED tubes have a two-pin fitting at both ends of the tube.

G13 Fitting

- Tube Diameter: 25mm (T8 = 8/8 inch)
- Distance Pin (Centre) to Pin (Centre): 13mm

The most common size of fluorescent or LED tube is the T8 which uses a G13 two-pin cap on both ends of the tube. The distance between the pins is 13mm and when inserted into the fitting, the tube twists to lock into place.

Also found on T10 (tube diameter: 10/8 inch) and the larger T12 (tube diameter: 12/8 inch).

G5 Fitting

- Tube Diameter: 16mm (T8 = 5/8 inch)
- Distance Pin (Centre) to Pin (Centre): 5mm

There is a smaller tube size – the T5 which uses G5 two-pin caps. The distance between the pins is 5mm.

This cap can also found on less popular T4 (tube diameter: 4/8 inch).