Factsheet:
LED v Fluorescent Tubes

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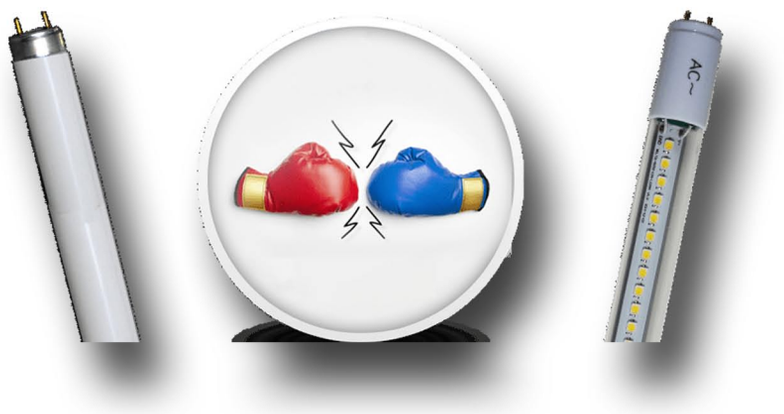
Changing from fluorescent tubes to LED can be done cost effectively by simply changing the tube, from a tradtional fluorescent type to an LED alternative.

Typically the conversion of a fluorescent tube, to LED, will offer a **40% energy saving** (on average) and a 50% increase in lamp life.

LED tubes are a cost competitive solution to reduce energy and much less expensive than changing the entire fitting.



Additional benefits to converting your fluorescent fitting to LED are:

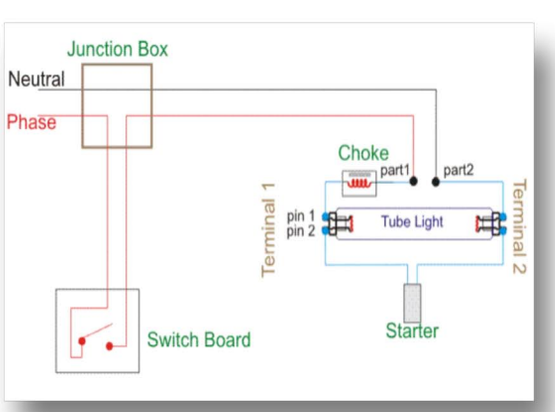
- **Instant start**
- **Flicker free**
- **Excellent colour consistency and uniformity of light**
- **Certain manufacturers products can be dimmed***
- **Directional light source**
- **Suit extreme environments -20°c to +45°C**
- **No Mercury content**

*with defined tube and ballast combinations

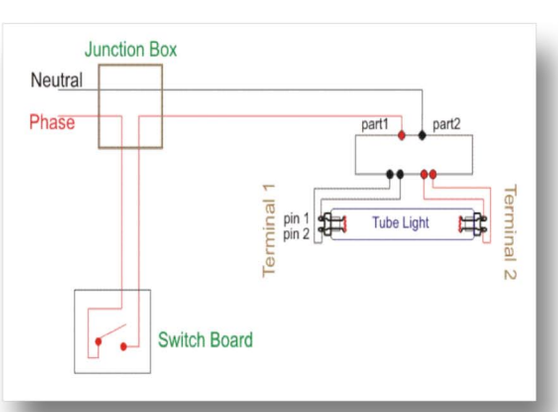
However, selecting the correct tube is crucial and this factsheet provides an overview to make sure that you select the right product, as the 2 main options are different, in terms of operation and electrical connection.

Fluorescent Fittings

Generally, there are 2 different luminaires available in the market and understanding which fitting you have will ensure the correct tube is selected for your fitting.



CCG or Switch Start – the easiest way to identify this type of fitting is that there is a starter in the fitting.



ECG or High Frequency – this type of fitting has a ballast to ignite (no starter) and the tube and is wired very differently.

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Converting to LED Tubes

Currently there are 4 retro fit options available in the LED tube market

Here's a brief overview of each of the options;

CCG/Switch Start Tube – supplied with an inline fuse to replace the starter, the existing control gear needs to be left in place so the retrofit tube will work.

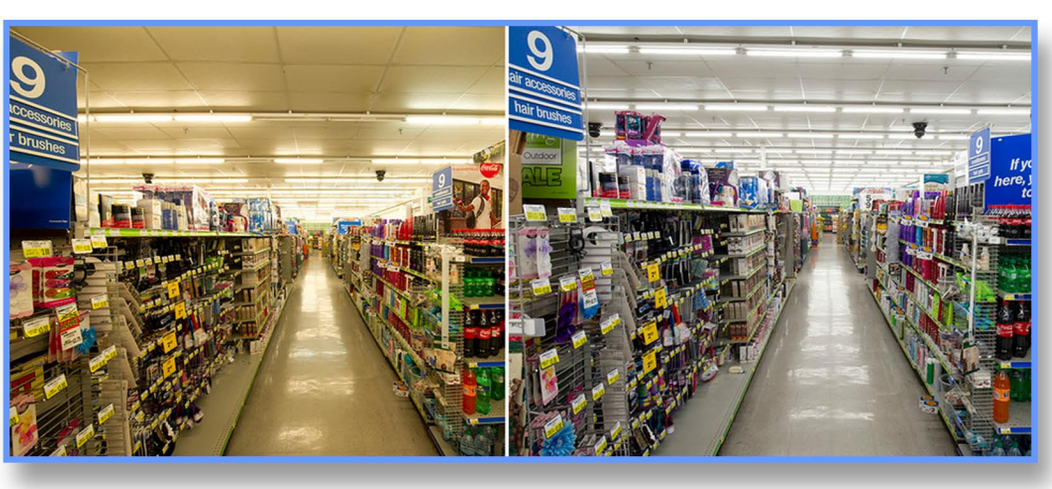
ECG/High Frequency Tube – this utilises the existing control gear to start the LED tube and is a straight swap. All manufacturers have a compatibility listing of the ballasts that their LED tubes will work with – this information can be provided upon request.

Universal Tube – a small number of manufacturers offer universal tubes these will work with both type of fittings **but beware** there is a compatibility listing of ballasts with which they will work.

Direct to Mains – With this method any control gear is bypassed and the live is wired directly to the lamp holder. **IMPORTANT: Any tube should only ever be only live at a single end** – never use a live to both ends of the tube, **as this is both unsafe and illegal.** Please note converting fittings to use a direct to mains tube will also void your manufacturers' warranty.

Remember, if a fitting has its control gear bypassed, and a standard fluorescent tube is used, this can cause a rupturing of the cathodes in the tube ends – although this might not be strong enough to break the glass, it could result in injury, if access equipment is being used for the re-lamping process.

However, for fittings out of warranty, a fully accredited electrician could offer a quotation for conversion. We also recommend a label is added to the fitting to advise 'direct to mains' tubes have been used, as this will be helpful for the next installer.



Before and after: fluorescent tubes on the left, LED tubes on the right

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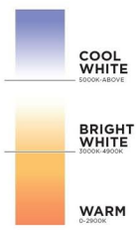
A consideration for all...

LED tubes are not compatible with emergency fittings

Standard LED tubes are not dimmable



Colour temperature of the tube – available in 3000k, 4000k or 6500k, the best colour temperature selection depends on the area being converted, for further guidance please see the information on our website regarding colour temperature or speak to a member of the team who will help you decide on the best colour to use.

Light output – in all tube lengths, there are varying light outputs. However, brightest is not always the best option – the light in an area should be decided by the area's usage. The Light Solution can offer support with the light output of the tubes to ensure the best product is selected.

Warranty - with all products this will be dependant on the manufacturer and will usually range from 3 to 5 years, this should be a consideration as the longer life product will offer a maintenance free solution for a longer period of time offering additional lifetime savings.

Summary of recommendations

- Always use a good quality product from a reputable source.
- Take the manufacturers instruction into account when installing, using and removing LED lamps.
- Ensure the product has safe pins – so you can safely touch the other end when installing the product.
- Always ensure the circuit is switched off before removing or replacing any lamps.

The Light Solution is a Trading Name of LampShopOnline
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Need more help or more information?

On our website you'll find lots of information about us and how we can help you get the most from your lighting products.

Visit our Information Guides section for help and advice on a wide range of lighting topics, such as colour rendering and temperature; types of dimming methods; and how to benefit financially from using energy saving lighting products.

We're constantly updating the website with new content, so make sure you keep checking back to see what's new!

You can also keep right up to date by finding us on social media

twitter.com/thelightsol

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