

Layout Lighting

By David King

Why add lighting?

You have been building that layout or diorama for some time now and just when you thought you were finished you stood back and took a long look at it. Something just didn't seem right. Wait a minute, I've got it there are no lights! How is everyone, including yourself going to see all of your hard work when the room lights go out.

So adding some lighting is going to help your scene look more realistic. The lighting doesn't have to work if you never what a night scene but even so some lights are on in the daytime as well. So here are some point forms to help reason why:

- To make your layout more life-like
- To add those missing details
- To see items on your layout in night scenes
- So the guy or gal on the street has something to lean against
- If there weren't a streetlight the guy in the car would have to run into a tree!

Uses of lighting

Lighting can be used for both direct lighting applications and indirect lighting applications. For direct lighting you can use flood lighting and task lighting. Flood lighting would be effective in rail yards, parking lots, school lots, industrial areas and any other similar locations. Task lighting would include lighting like that located at gasoline pumps, telephone booths or any where else that someone would need to complete a specific task.

Indirect lighting can be found in many locations. Sometimes the indirect lighting comes from street lamps, building lights, hallways, park lighting and similar locations. This lighting is usually less intense than that of direct lighting and many times it is added for looks or security.

Types of lighting

Many different types of lights are available for your use. Some of the choices would include incandescent, fluorescent, luminescence, light emitting diodes (LED), fibre optic and more. Some of the factors that will influence your decision on which type of lighting to use will depend on the look that you are trying to achieve. If you are looking for that old street lamp with a clear screw in bulb you most likely will need to use an

incandescent bulb ranging in size from a grain of wheat bulb to screw in bulb with a mini candelabra base.

Fluorescent lighting is useful for flooding a large area with lighting. Department stores use them, factories use them when they have low ceilings, offices use them and others use them as well. Fluorescent lighting has become more popular over the years as it tends to be a very economical way of providing a lot of light at a relatively low cost. Compact fluorescent tubes have become more popular in our local society as we use them to replace incandescent lamps. Even in our modeling a new comer to this type of lighting is cold cathode fluorescent light. These lights use very thin tubes, little heat generation and lots of lights. These can be used in large buildings such as skyscrapers and factories.

Luminescence or electro luminescence can be used in our modeling for different uses. Luminescence can be used to have an object glow. This can be used for stars on a backdrop or a ghost in the forest. This is usually sold as paint and can be found wherever theatrical or Halloween supplies are sold. Electro luminescence is useful for neon signs and Miller Engineering makes many of these. These signs can be used to enhance any city scene as neon signs became popular many years ago.

Light emitting diodes or more commonly referred to as LEDs are everywhere these days, and for good reason to. LEDs are used because they use very little power, don't get very warm and they last a very long time. At first LEDs were only available in red, green and yellow but this has now changed greatly. Almost any colour is available such as blue, white, orange, violet and others including the standard red, green and yellow. Some LEDs even have more than one colour such as bi-colour red/green lamps. LEDs are very versatile in their uses from modern street lighting to signal lights to headlights in your locomotives. The list of uses can go on and on.

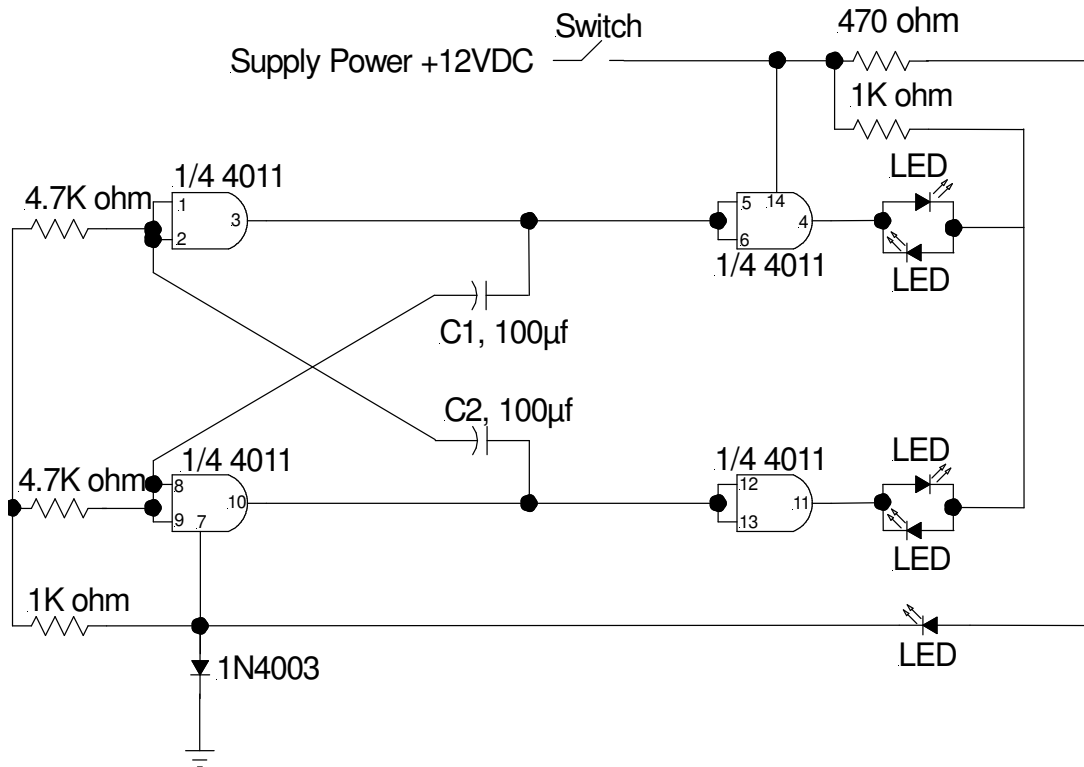
Fibre optics is not really a type of lighting but more of a way to transfer light from one location to another. Sometimes the light source you wish to use can't be installed in the location that the light is needed so a piece of fibre optic cable can be used to transfer that light. The best quality fibre optics are actually made from glass strands with very clean-cut ends. One end of the strand is placed close to the light source and the other end is placed where you would like the light to be. The light actually reflects off of the inside of the glass strand until it comes out of the opposite end. The type we use in modelling tends to be made from plastics and works well for our application. When using glass strands there are many safety precautions that need to be followed.

Lighting projects

Lighting projects can be as simple as adding a street light from one of the many different types that are available to ones that you can make yourself. Model Power, Minatronics, Brawa and others make ready to install lighting. These range in pricing greatly and sometimes this even has to do with the quality.

Other lighting projects can be used for FREDs, stop lights, track signals, railway grade crossing and more.

Flashing circuit for grade crossing



This is the electrical schematic of the circuit and below is a photo of this project.

