

DIY LED Lights for Orchid Growing

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It's almost November in the Pacific Northwest and the darkness that we used to call daylight is fast approaching. The rain festival has started and the gray days are the norm. And it all happened so quickly.

But we don't have to sit in the dark. Many of you already use lights if you are growing full time indoors. If you have a greenhouse or grow with a window nearby, you have some light all year. However there isn't enough light on a typical day to keep your plants

robust and as healthy as they can be during the winter. You should consider supplementing the light needs to make up for the lack of intensity and day length of our northern skies.

For those wishing to expand their lighting set up, and not finding a configuration that fits their layout, you might wish to consider making your own LED light system. I will cover all the basics, but understand there are details omitted. If you wish to know more, please feel free to contact me for further information.



Let's start out with the finished product. This one has 11 lights on it. We will be using an LED light called a chip on board (COB). Each COB has its own built in circuit so that all is needed is to provide normal house current to make it work. All are mounted on square aluminum to provide cooling.

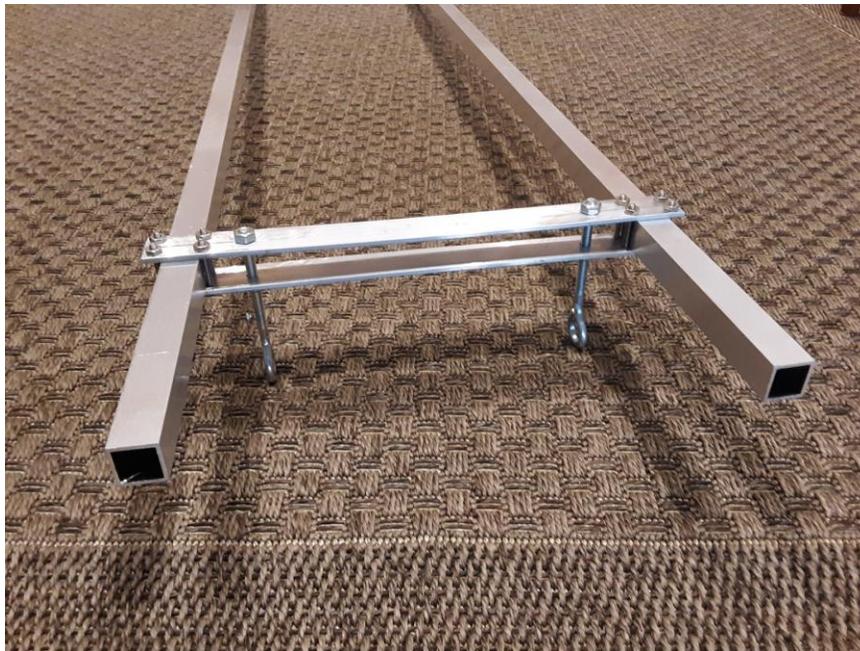
This is a close up of the COB that will provide light from the LEDs on it.



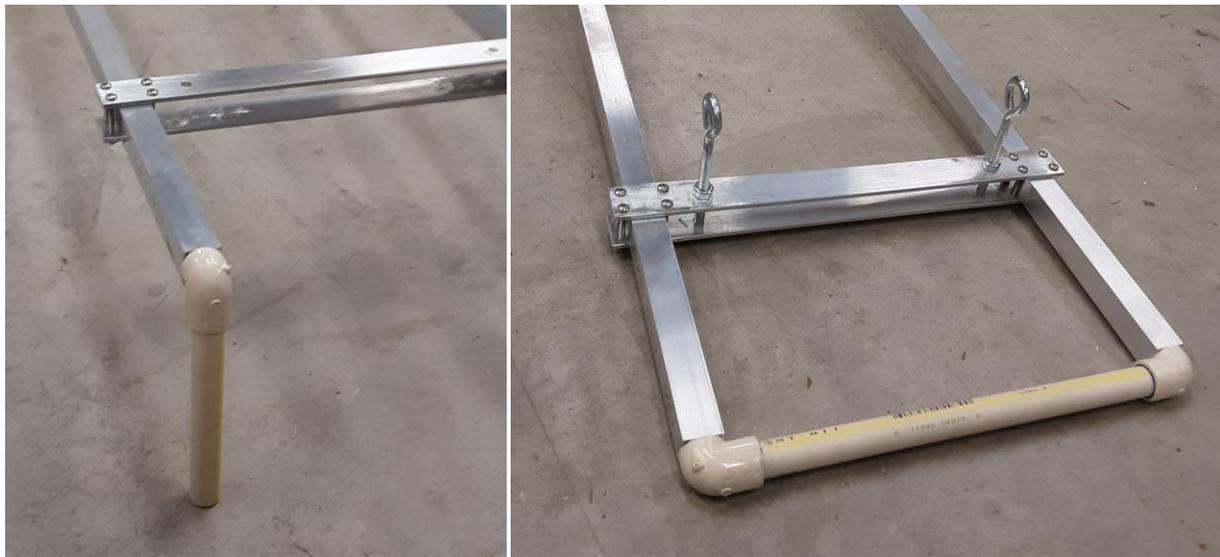
I started with straps that will be used to mount some eyelets to hang this system. I used 1 inch aluminum cut to length and drilled holes for all the mounting screws.



These are then mounted to the square aluminum pieces with screws and the eyelets are attached also.



To be able to run water through the tubes, I used plastic fittings from a typical home improvement store. The size is perfect for sliding into the square holes. As it is literally a round peg in a square hole, you can use common silicone gasket/sealer to close the holes around the fittings. On one end it will be a 90 degree for the tubing to connect and the other simply connects from one tube to the other.



Now we need some mounting plates for the COBs. I cut these from 2" wide aluminum straps and drilled the holes for mounting.



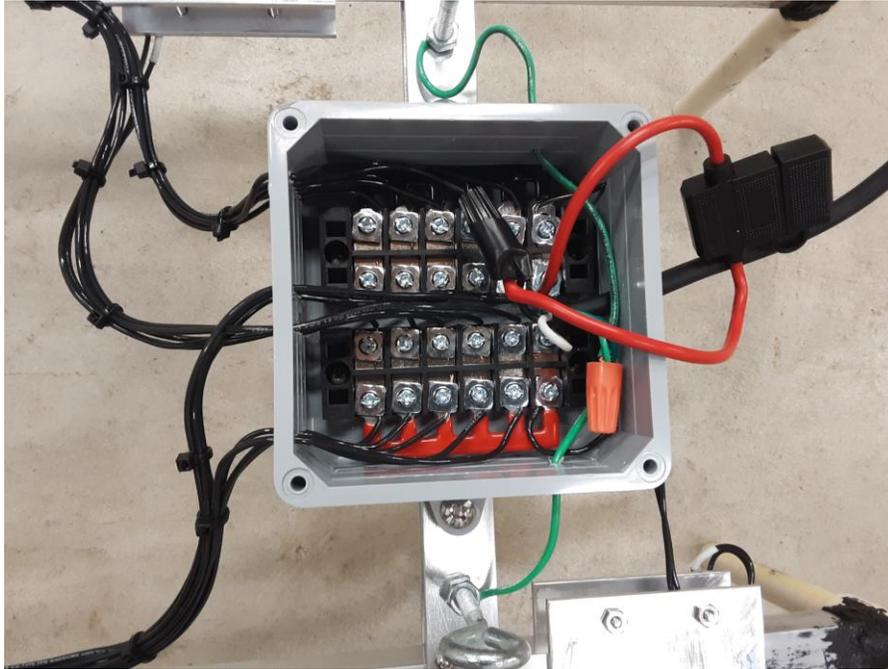
These will be used to put the COBs onto the square tubes. They are basically sandwiched together as shown.



After mounting the LED s the way you want, then it's just a matter of connecting the wires to each. This is a nice design on these at it is simply pushing the wire into the white connector. All of these go to a waterproof box (gray) that has screw on terminal connectors in it.



It looks like a lot of wiring, but it is just a simple 4" plastic electrical box with a couple of terminals that you can purchase cheaply online. Just screw on each wire. There is a fuse for additional protection and I am assuming this will be plugged into a GFCI outlet designed to protect things plugged into an outdoor plug.



My next step was to test the unit. The yellow top storage container is to hold the water for the cooling. The plastic tubing runs from the bin to the light setup. There is a simple hydroponic pump in the container to pump the water up to the lights and then it comes back down to the container.



This unit was built for a friend and was designed to fit the space and plants in his growing area. It can be built in many configurations as a person wishes to have. It can be used indoors or outdoors in a greenhouse setting. This unit was about 500 watts and cost about \$150 to build.

As I said previously, I have omitted several details, but wished to pique someone's interest on what can be done if you wished to improve the health and growth of your orchids during our seasonal sunshine doldrums. I can say that without a doubt, adding lights for this part of the year has made a significant improvement of my plants and definitely the amount of blooms on many of my orchids.

So there you have it. A DIY system of LED lighting for your growing area.

