

Moonlighting a Tank

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A recent trend has been to provide moonlight in aquariums. In an effort to try to recreate lighting patterns in nature, a blue light system can be used to transition between your full lighting system and total darkness. Some aquarium keepers feel this is a more natural and less stressful method of lighting, especially in a salt water marine tank where the lighting systems are quite bright. I thought I would try something similar for my 100 gallon freshwater aquarium.

There are several options to provide moonlight in the aquarium. The first option I considered was to use a canopy with moonlighting built in along with the regular fluorescent tubes. I already had two 4 foot light canopies and did not want to spend the money for a new canopy.

Another option is to use blue Christmas lights, preferably with LEDs (Light Emitting Diodes), rather than incandescent bulbs. The LEDs are more energy efficient because they give off less heat, and can give more hours of service than the traditional bulbs. I found a string of blue LED Christmas lights, but the lights seemed too far apart and the string was too long to use without modification. Also, there were "rope lights" but these also seemed to be too long to use without cutting them to fit in the existing 4 foot canopy. My quest continued.

An option I found in Cichlid-Forum was to use cold cathode tubes www.cichlid-forum.com/articles/diy_moonlight.php. These tubes distribute the blue light evenly across the aquarium. I usually like do-it-yourself projects, so I looked in K-W Surplus and Orion Electronics, both in Kitchener. They had 12 and 18 inch cold cathode tubes. Along with an adapter and some other small parts mentioned in the article, the total cost would be between 20 and 30 dollars. Another D-I-Y option is to purchase LEDs and other components to make light tubes. You can calculate the value of limiting resistors required to wire up your LEDs at edcalc.com. This option came in around 30 dollars as well, but I could not readily find my soldering iron, so I continued my search for options.

A member on our forum mentioned that a manufacturer in nearby Brampton had LEDs already mounted on circuit board strips inside tubes ready for shipping. I surfed to their website at www.pcbboard.ca. They had a 4.75 inch tube with 6 LEDs for \$18.95 and a 10.5 inch tube with 9 LEDs for \$24.95. Each had end caps for the one inch diameter tubes and a power adapter with 6 feet of connecting wire. I can't remember what the shipping charge or taxes were at that time. Since they were all made up and ready to ship, I ordered a couple of each. They arrived within two days.



To install, I simply lifted my light canopy a bit and placed one of the long tubes on the glass with the LEDs pointing down into the tank. Mounting clips are available at an extra cost. I plugged into a timer set to come on a few minutes before the other timer for the canopy turns off the large fluorescent tubes at 10 pm. This particular moonlight strip lit up about one third of the tank, with the other areas a bit darker, and the corners were the darkest. The sun gradually lights up my fish room in the morning, so no blue light time was required before the fluorescent lights come back on around 11 am.

For a few nights, I watched the behaviour of my fish for about 15 minutes before the canopy lights went out leaving the blue moonlight. I made the following notes regarding the behaviour of my fish during the hour or so of moonlight:

- all of my plecos, including my very shy L354, were immediately out looking for food
- most of my loaches retreated to hollow logs or to the branches of leafy plants
- the African Red Eye Characins formed a very tight school just above a leafy plant, contrasting their usual constant motion in all directions
- the iridescence on the Colombian Tetras was pretty intense in the blue light
- all the various species of tetras pulled into tighter schools hovering just above rock piles or near plants
- the larger Severum cichlids began to settle into their night time spots in the corners or beside large rocks

- the Denisoni barbs began to drift with their faces pointed down to the bottom of the tank

I had noticed some of these behaviours years ago when I used a flashlight with a piece of red cellophane over the light, to look into an aquarium that had been dark for a few hours. It was an interesting comparison, some things the same, some different.

The moonlighting option does seem to make the fish more comfortable when the canopy lights are turned off, no more sudden darkness. I have not yet put similar moon lighting on other tanks, but I do have 3 more strips of LEDs, I just have to get some more timers.



Wow, actually Made in Canada ! - **Zenin**