

## Lighting Journey JGT

The quest for good lighting was high on my list. Not only would better lighting allow me to see more easily but better yet it would be safer! Thus as we moved into our new house I wanted to improve the lighting. Our house is 2 story, located in Oak Island, NC. The lower level will hold my woodshop and possibly two cars. The following documents my saga. To take light level measurements I used "Lux Light Meter Free" see <https://play.google.com/store/apps/details?id=com.doggoapps.luxlight>. I cannot verify the accuracy of the app but I used it for all measurements thus you can consider it as a good reference.

The large area is 16.5' x 60' the smaller is 28.5'x28.5'. Originally my thought was to just use the large area but so far I have used both.

The original fixtures each had 4 SATCO S9976 LED tubes. Per the specs they would deliver 2100 Lumens and have a color temperature of 3500K which is a bit on the warm side.



We allowed the original owners to stay in the house an extra month past closing and we used the large area to store everything.

My first reference measurement was taken just to the left of the large opening. It measured 277 LUX.



One of my sons offered to paint the green areas with white high gloss paint. After he completed I again measured the light output, it had increased from 277 LUX to 308 LUX, e.g. a little more than a 10% improvement.



On a previous light project the tubes I used had clear plastic as the outer shell rather than glass. I therefore decided to remove the translucent plastic on the fixtures. This increased the light level from 308 LUX to 339 LUX, e.g. about 10% improvement.



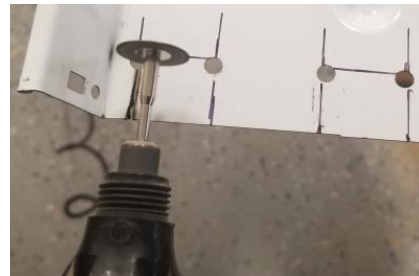
I had four “HYPERIKON LED TUBES” (Hyperikon 4 Foot LED Tube, T8 T10 T12 40 Watt Replacement (18W), Single End Ballast Bypass, Clear Lens, UL, 2160 Lumen, 6000K left over from a previous project and had been very pleased with them. To use these tubes required changing the tombstones. Tombstones are the connectors that you insert the ends of the tube. In my previous project this was very easy but not the case for the fixtures in the new workshop.

On the left is the tombstone for the Hyperikon tube and on the right is the tombstone used in the fixture. Note that the old tombstone has tabs that snap into the metal of the fixture.



It seemed simple enough just to mark and cut the fixture.

Using my Dremel and diamond cutting disk I proceeded to cut. Even though I used a diamond disk it still took longer than I expected.



After completing the first slot I tested and the fit look good, thus I cut the other four slots.



I assembled everything and reinstalled the fixture. Then I realized that the electrical connections for the tombstones were on the other side of the metal.

I removed the fixture, made the slot a bit deeper, applied Duct tape to prevent cutting into the wire and then reinstalled the fixture.



Before installing the new tubes I moved the ladder to measure the light output from an old fixture.



AH! Success, I then measured the light level output. I placed my phone on top of the ladder yellow rail, the ladder is directly under the fixture. WOW, better than twice the output.



OK so I felt I was on the right path and very happy with the results. Now I needed to order more of the Hyperikon tubes.

I did NOT want to go with the single ended tube.

Also, cutting the slots for the tombstones was an effort.

I did my research at the Amazon site and placed my order.

DRAT – somewhere along the line I got confused and ordered the WRONG tubes. I had ordered 3.75 foot long tubes rather than 4 foot tubes.

I called Hyperikon support explained what I did and what I wanted. Very quickly he found what I wanted and send me an email with a link.

I clicked the link and ordered the bulbs

With the new double-ended bulbs the installation was MUCH easier. Just make a few wiring changes and use the same tombstones.

I then installed the new bulbs.

DRAT!!!! They were not 6000K

Again I called Hyperikon and again he sent me the link.

I decided to see what eBay had to offer and found “T8 4FT LED Tube Light Bulb 60W Bi-Pin G13 LED Shop Light 6000LM”. The thought of 6000LM of output had me on a cloud. See, <https://www.ebay.com/itm/T8-4FT-LED-Tube-Light-Bulb-60W-28W-22W-Bi-Pin-G13-LED-Shop-Light-2400LM-6000LM/352869408489?ssPageName=STRK%3AMEBIDX%3AIT&var=622310081202&trksid=p2060353.m2749.l2649>

I placed the order!

**BTW** there were three dropdowns on the eBay page. Ensure you make the correct selections.

The order quickly arrived. I made the wiring changes and installed four tubes.

WOW, WOW!!! 5574 LUX (again the phone was placed on top of the yellow rail on the ladder under the fixture.

Note the intensity of the light on the back wall on the left side (new tubes from eBay) and the light on the far right wall (Hyperikon tubes).



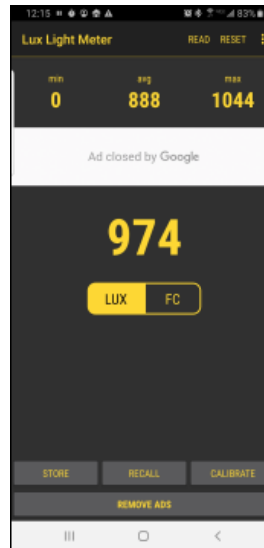
I installed the new tubes in three other fixtures. I now have four of my fixtures with the new tubes from eBay and one fixture with the Hyperikon tubes.

Now to make one more measurement near the left side of the large opening.

1. Original – 277 LUX
2. Painted the walls – 308 LUX
3. Removed the fixture covers 339 LUX
4. Latest – 974 LUX

Again WOW, WOW!!

The shop is now super bright and I'm VERY pleased with the results.



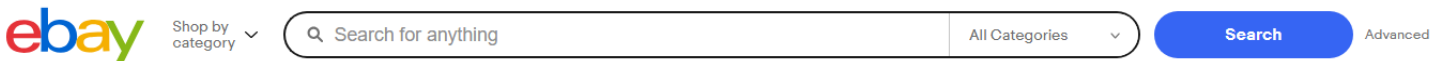
Update: 02-2024

I decided to upgrade the smaller area in my workshop which is a 2-car garage. Currently, it has 4 fixtures, each with 4 tubes. I ordered 25 T8 LED Tube Lighting 4FT Fluorescent Light Bulbs 22W~60W G13 Bi-Pin 5000K-6500K at a cost of \$227.59 plus tax, shipping was included in the price of the bulbs.

I just realized that I have two fixtures installed

and two new fixtures that are not installed. I thought I had four fixtures.

## 1.1 Order for more bulbs



### Order details

Printer friendly page

**Your item was delivered.**  
Delivered on Wed, Feb 28  
[Track package](#)

**Order info**

Time placed

Feb 24, 2024 at 2:53 PM

Order number

18-11221-87675

Total

\$242.95 (1 item)

Sold by

[cnsunway](#)

**Delivery info**

Delivered on Wed, Feb 28

✓

Paid

Feb 24

✓

Shipped

Feb 26

✓

Delivered

Feb 28

**Tracking details**

Number

271389607230

[Track package](#)

**Item info**

T8 LED Tube Lighting 4FT Fluorescent Light Bulbs 22W~60W G13 Bi-Pin 5000K-6500K

\$227.59

Item number: 284249722062

6000K Cool White · 60W D-shape · 25 Pack

Returns accepted through Mar 29, 2024.

[Leave feedback](#)

[Contact seller](#)

[More actions](#)

**Shipping address**

John Terdik

208 W Oak Island Dr

Oak Island, North Carolina 28465-6915

United States

**Payment info**

Ending in 0134

John Terdik

Feb 24 at 2:55 PM

\$242.95

1 item

\$227.59

Shipping

Free

Tax

\$15.36

**Order total**

**\$242.95**

How do you like our order details page?

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[https://www.ebay.com/itm/193477467540?\\_trkparms=pid%3D101368%26pg%3D3663644%26asc%3D20230104190052%26meid%3Dfa726e95b1794894b4b53c3e73a33656%26mech%3D1%26b%3D1%26aid%3D1110018%26algo%3DHOMESPLICE.COMPLISTINGS%26ao%3D1%26algv%3DPromotedCompV3WithHighAdFeeAndToraFilterV1AndItemCfCoviewWithEnhancedMultimodalRecall%26sd%3D284249722062%26rkt%3D12%26itm%3D193477467540%26amclsrc%3DITM%26pmt%3D1%26noa%3D0%26lsid%3D0%26sid%3DAQAIAAAECjoBzXAzyM0m0NYVZThCgA%3D%26rk%3D4%26mehot%3Dnone%26&\\_trksid=p3663644.c101368.m2333&amdata=cksum%3A193477467540fa726e95b1794894b4b53c3e73a33656%7Cenc%3AAQAIAAABMBi0HdkMc7IMFDX7KiyakSes6plXBOWHSj%252FFktpvuCNWry3Qi%252BFyGyxG4pEaSLV2xulEAM2liYhFpRAcyAIBsGjnOarXP7uVOqEawPa%252F0Gvwmoq%252B1rBdGOeDzlrLAPliYtsNH9fZ3gXYnAHYtNJlhJYKJ%252FgL4rhdq6a8E5Dp2lxXOy7Y%252FC%252Fyn2u4Ju8h%252BewFYWqGDTaTu7g47xZ%252FGFakkUJj7uncOQI3](https://www.ebay.com/itm/193477467540?_trkparms=pid%3D101368%26pg%3D3663644%26asc%3D20230104190052%26meid%3Dfa726e95b1794894b4b53c3e73a33656%26mech%3D1%26b%3D1%26aid%3D1110018%26algo%3DHOMESPLICE.COMPLISTINGS%26ao%3D1%26algv%3DPromotedCompV3WithHighAdFeeAndToraFilterV1AndItemCfCoviewWithEnhancedMultimodalRecall%26sd%3D284249722062%26rkt%3D12%26itm%3D193477467540%26amclsrc%3DITM%26pmt%3D1%26noa%3D0%26lsid%3D0%26sid%3DAQAIAAAECjoBzXAzyM0m0NYVZThCgA%3D%26rk%3D4%26mehot%3Dnone%26&_trksid=p3663644.c101368.m2333&amdata=cksum%3A193477467540fa726e95b1794894b4b53c3e73a33656%7Cenc%3AAQAIAAABMBi0HdkMc7IMFDX7KiyakSes6plXBOWHSj%252FFktpvuCNWry3Qi%252BFyGyxG4pEaSLV2xulEAM2liYhFpRAcyAIBsGjnOarXP7uVOqEawPa%252F0Gvwmoq%252B1rBdGOeDzlrLAPliYtsNH9fZ3gXYnAHYtNJlhJYKJ%252FgL4rhdq6a8E5Dp2lxXOy7Y%252FC%252Fyn2u4Ju8h%252BewFYWqGDTaTu7g47xZ%252FGFakkUJj7uncOQI3)

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## 1.2 *Wiring*

### DUAL-ENDED BALLAST BYPASS INSTALLATION

Remove the ballast to install. This ensures optimal performance and saves more energy

