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What Makes Our Lights Different From The Others? Technical Specifications

Our JTV Energy Lights® are unique. They are very similar to the wave length of the sun. Now you can feel like you're on vacation in the Caribbean all year round.

This paper contains the technical information as to why our tubes, bulbs and flood lights are different from what is available in the marketplace.

Tubes

You will see below several charts comparing the wavelengths of the JTV Energy Light Fluorescent tubes to Sun light and to Cool White Fluorescent tubes. As you can see the JTV Energy Lights wavelength spectrum is very similar to Sunlight. In contrast, the Cool White Fluorescent tube wavelength is very different from sunlight. Cool White tubes are what you will find in almost all offices, factories and school buildings.

There is also a difference in two measurable variables. One is the International Color Rendering Index (CRI) and the other is the Kelvin temperature.

Color Rendering Index

The International Color Rendering Index (CRI), pertains to the way the color of objects appear under a lamp as compared to a standard reference source and is dependent upon what is called the spectral power distribution. Scientists judge the color-rendering capability of light, or seeability, by the CRI scale. The scale runs from 1 to 100. All colors appear "true" under natural daylight, which has a (CRI) of 100...perfect light.

In plain terms, the color rendering index is a measurement of how similar to sunlight a fluorescent tube is. Sunlight is rated 100. The CRI for our tubes is 92. While other tubes may have a higher CRI, this is only one factor in determining whether the tube is actually a full spectrum light. These other factors are covered below.

Kelvin Temperature

The other variable is the color temperature of a light source which is called the Kelvin Temperature. This is a measurement of light quality. Color temperature has no relationship to room temperature and pertains only to the appearance of the light source. Color temperature refers to the temperature in degrees Kelvin at which a blackbody, a theoretical perfect radiator, would have to be heated to match most nearly the perceived color of the light source.

A true full spectrum light falls between 5500K and 6000K on the Kelvin Temperature Scale. The Kelvin Temperature of our tubes is 5750K. While any tubes in this range would

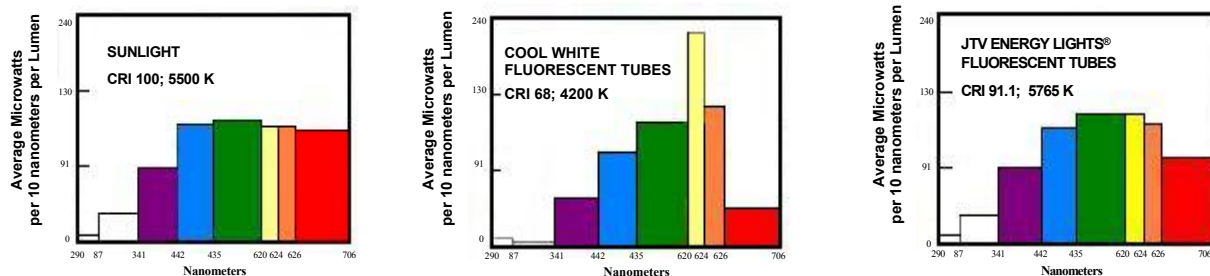
be considered acceptable, the best position on this continuum is in the middle at 5750K. This position is due to color change with Kelvin temperatures, which means having a temperature too high or too low in this range will reduce the color variations.

For example, most Cool White fluorescent tubes cast a yellowish or green tint and measures between 4200K-4500K. Using this same indicator, JTV Energy Lights measures approximately 5750K, which is the same as ideal natural outdoor light. (Only one of our tubes, the T8 U-Shaped, has a Kelvin temperature less than 5750K.)

Phosphors

What creates the color of light in a fluorescent tube is the mix of phosphors that is deposited on the inner surface of the tube. The typical Cool White tube uses 2 phosphors. Some tubes which are sold as "natural" or "daylight" or "tri-phosphors" are really no better than the cool white tubes.

Our tubes are all manufactured with 5 phosphor bands which result in the most accurate color corrected simulation of natural sunlight. On the graphs below, notice the similarity between our JTV lights and natural sunlight.



Life Span

Most cool white tubes are rated to last only 20,000 rated hours. Our tubes offer an amazing 36,000 user hours of light.

When a cool white tube reaches 40% of its rated hours, it is recommended that the tubes be changed due to the loss of effectiveness that will have occurred. In other words, if a tube is rated to last 20,000 hours, it will actually need to be replaced after 12,000 hours.

With the JTV Energy Lights the 36,000 hours are the actual hours of use. These tubes will still have 86% of the initial light output after 26,000 hours of usage.

Bulbs and Flood Lights

There are several factors that make our bulbs and flood lights unique.

1. There is special glass called neodymium used in the process. This glass is designed to reduce the yellow wavelength that comes through the glass in a regular light bulb. Sunlight has very little yellow in it. This reduction of yellow allows our bulbs and flood lights to more closely match the wavelength of sunlight.
2. JTV Energy Lights bulbs and flood lights last 20,000 hours. As an example, a regular light bulb might last 750 hours. This means it takes over 26 regular light bulbs to equal the life of one of our bulbs.

Price Comparison

You can buy what are labeled Full Spectrum Fluorescent Tubes at Home Depot and Loews. While they are initially less expensive than the JTV Energy Lights tubes, they don't last anywhere as long as the JTV tubes, which are rated to last 36,000 hours. The JTV tubes are also made with 5 phosphors while most other tubes on the market are made with 3 phosphors.

Cost comparison of JTV Energy tubes to Phillips Natural Sunshine tubes

Available at Home Depot, Phillips Natural Sunshine 4 foot T12 tubes costs \$5.97 each. Each tube is rated to last 20,000 hours. The Kelvin temperature is 5000K and CRI Index is 86. It is manufactured with 3 phosphors.

JTV Energy Lights 4 foot T12 tubes cost \$12.95 each (there are case discounts available which reduce the price by 20 to 30%). Each tube is rated to last 36,000 hours. The Kelvin temperature is higher at 5750K and CRI Index is also higher at 92. It is manufactured with 5 phosphors. These factors make the JTV tube a more effective tube for producing a long lived full spectrum impact.

Based on the life span of the Phillips tubes, it will take almost four Phillips tubes to equal one JTV tube which means the price of four Phillips tubes would be \$23.88 plus tax. For the JTV tube, once the case discount of even 20% is factored in, the price of each tube becomes \$10.36.

Keep in mind there is also the cost of labor for changing tubes. You will have to change the Phillips tube four times to every one time for a JTV tube.

A comparison of JTV Energy bulbs to GE Reveal bulbs

GE Reveal bulbs come in a 6 pack of bulbs which sells for \$3.77. This equals a price per bulb of \$.63 plus tax. Each bulb is rated to last 750 hours. The entire pack will last 4500 hours. Each JTV bulb is rated to last 20,000 hours. It would take approximately 4 GE 6 packs to equal a single JTV bulb. This means the real comparison cost of the GE Reveal bulbs is \$15.08. The cost of the JTV Energy Lights bulbs is \$12.95 per bulb.

If you purchase 8 to 20 JTV bulbs, you'll also receive a 10% discount which will reduce the price per bulb down to \$11.65. If you purchase 21 or more bulbs, you'll receive a 20% discount which will reduce the price even further.

Another positive impact is you will also be reducing environmental pollution from 24 bulbs and the packaging by using one JTV Energy Lights bulb.

As mentioned earlier, GE's bulbs are also not a true full spectrum bulb. They have a high level of yellow in them which sunlight doesn't have. What the GE bulb does is it covers the yellow by adding more blue. The JTV Energy Lights bulbs use a special glass called neodymium which actually blocks the yellow from being released this allows the light emanating from it to be full spectrum.

60 Day Money-Back Guarantee

We offer a two-month money-back guarantee which means you can experiment with the tubes for 60 days and prove to yourself the benefits of these lights. This 60 day money-back guarantee applies to our complete line of natural lighting products.

Two Year Burnout Warranty

We are so confident in the quality and longevity of our tubes that we even give you a two year burnout warranty. From experience we find that our tubes tend to last 8 to 10 years. I have personally had many tubes in the office last 11 and 12 years!

Discounts Available

We offer a discount from 20-30% off of case purchases. We also have a quantity discount available on all of our bulbs and flood lights of 10-20%.

Conduct Your Own Research And Prove It To Yourself

We make available to potential clients a questionnaire that can be administered to a group of employees so that you can determine for yourself the value of these tubes and lights. We suggest you have participants keep records for 10 days to two weeks while they are under the lights you currently have at your facility. Next, change to our full spectrum lights, wait a week for people to adjust to the new lights and then have your participants keep records for another 10 days to two weeks. While our research shows there is no placebo effect involved, if you have that concern, you can change back to your lights to confirm the results.

The questionnaire is meant to be completed four times during the day at 9, 12, 3 and 5. Participants will record: whether they have headaches, their fatigue level, eye strain, attitude, and productivity level. If participants have a computer reminder system, it can be set to remind them at each time period to complete the questionnaire.

Based on our research and the feedback from our clients, the end result is people feel better, work better, are less prone to headaches and fatigue, and are more productive when they are under JTV Energy Lights tubes, bulbs and flood lights.

For a copy of the questionnaire, click here http://www.teplitz.com/lighting_research.htm.

If you have other questions, email us info@Teplitz.com or call 800-77-RELAX.

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