



SUNNYSLOPE NEIGHBORS

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About Us

SUNNYSLOPE is a neighborly area we love. Once part of the county, today Sunnyslope is within the City of Phoenix -some folks even call it ‘downtown’. Many positives exist for Sunnyslope including the Mountain Preserves, parks, good restaurants and new neighbors. See some [here!](#)

New 2700 Kelvin Light Emitting Diodes (LED) streetlights are popping up everywhere in the City of Phoenix! A few years ago the city decided to replace old High Pressure Sodium (HPS) streetlights with new LED streetlights. Soon many neighborhoods began seeing the ‘horrible’, blue, 4000 Kelvin LED streetlights. The unusual ‘blue spike’ of LED lights was not understood and the city survey had basic flaws. Yet the majority of residents showed that they did not like the ‘test’ 4000K LED streetlights.

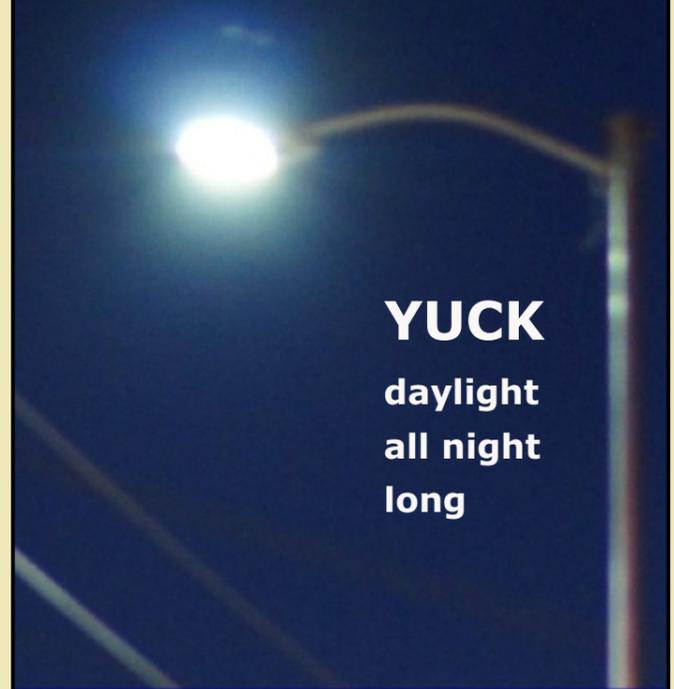
Based on professional experience of several neighbors who recognized and explained the potential health issues to aids and council members. The points related to bad LED lights for us, wildlife, and our quality of life that Phoenicians cherish became a base line. The team helped block-watch groups, city staff, and council members learn about the LED problems and a solution. The newer 2700K LED street and park lights matched with excellent energy efficiency.

The Phoenix City Council, approved 9-0 the bid for 2700 Kelvin streetlights (about 100,000) on 11-30-16. Soft White Wins!

Installation since then make the transition of streetlights nearly complete in 2019. However, new lights in Parks will be more incremental over a decade.

Many towns and cities are now choosing ‘soft-white’ LED. More about LED [here](#). Channel 12 [report](#) showing many folks don’t like painful, bright, LED lights (10/7/16). News Channel 3 & 5 [segment](#).

This LED streetlight 4000K



YUCK
daylight
all night
long

The blue hue from LED lights like this one on Hatcher are being avoided now as the City of Phoenix replaces this fixture with newer ‘soft-white’ LED rated at 2700K!

City of Phoenix survey was unclear on web site...

...but more than half the Phoenicians that took the survey did not like the 4000K LED streetlights.

Neighborhood groups and many associations also asked the City to reconsider new street and park lighting.

Neighborhood Block Watch leaders asked the City to reconsider LED lights and specify 2700K fixtures for most applications!

Phoenicians found the city departments willing to take a second look at the rapidly improving LED technology. A second look found the request of neighborhoods of 2700 Kelvin LED possible with excellent energy efficiency. So everyone got better, safer, LED lighting on our streets and parks!

GOOD News!

Thank your Phoenix City Council members for making a smart choice and selecting 2700 Kelvin LED streetlights. Plus, the Streets Transportation and Parks & Recreation Directors reconsidered the newest models and picked a better hue - 2700K!

To contact the Mayor and your City Council member: [Click here](#).

AVOIDING Blue Hue from Light Emitting Diode (LED) for night lighting is the smart thing to do!

In the light fixture (above) the spectrum, has an unusually high amount of blue. This blue is like daylight and is problematic.

Located on Hatcher street the horrible, blinding, plus bad glare are what folks have described as problematic for bicycles riders and pedestrians.

This cobra head streetlight (above) is considered unhealthy for people and wildlife because it is 4000 Kelvin - the daylight at nighttime effect.

This ‘daylight’ streetlight is on Hatcher Street near Central Ave. (2017). Update: LED bad streetlights are being replaced with better 2700K fixture - 2019 about 100,000 have been replaced in City of Phoenix.



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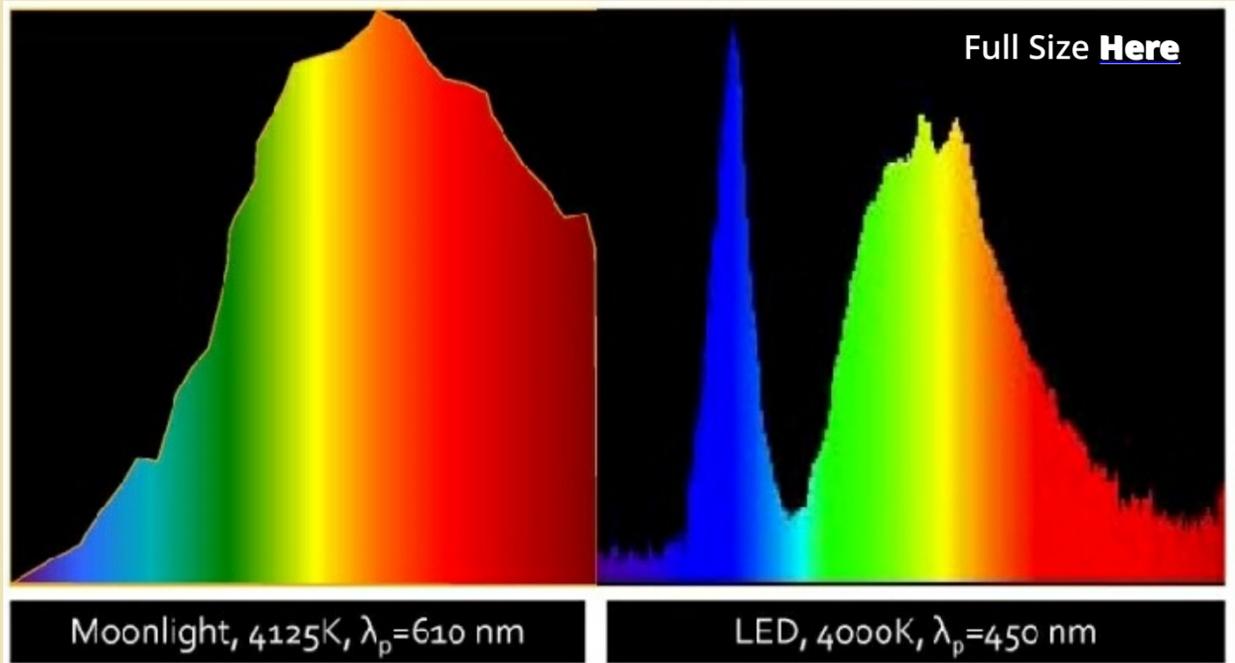
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Moonlight & LED CCT analysis from Benya Burnett Consultancy, Davis CA.

This spectrum analysis shows the comparison of the natural moonlight and LED at 4000 Kelvin. The blue spike makes LED unique and problematic. Blue is daytime for your body and health issues are now being connected to blue lighting from LED streetlights, cell phones, computers, and televisions.

Apps can be used to 'filter blue' out at nighttime on your cell phone(s).

GLARE and REFLECTION of bright outdoor lighting are unintended consequences which start in brochures and end up hurting our outdoor, nighttime, environment.

High Kelvin numbers - above 3000K, create a light source that is like daylight for people and wildlife. These make it hard to see into the nighttime and when one all night are 'blinding'.

Blue spike can be reduced with 2700-3000K LED streetlight models. These 'soft-white' 2700 Kelvin LED fixtures often reduce glare and allow better night vision for pedestrians and bicycles.

Soft-white LED can be found for your home too and are often 2700 Kelvin.

Many cities are now picking streetlights below 3000K. Soft-white and dimmer LED models allow good vision at night while providing even better energy savings.

Understanding Quality of Light!

International Dark Sky Association with three decades of experience, great resources, and experts that help with accurate evaluations. Our friends in Tucson were a GREAT help to Phoenicians in leading the world to better 2700K LED street and park lighting! [More here.](#)

Department of Energy 2013 Research on pedestrian lighting needs and better LED lighting approaches - [here.](#)

Options for LED for your home...

We can all benefit from LED lighting. In our homes, 'soft-white' bulbs are typically rated at 2700 Kelvin. Check on back of case before you buy new lighting for your home or business. See Cree LED example below - right. Good news includes more energy efficient and LED are not very hot. Special dimmers are necessary but they save more energy than old 'watt' dimmers.

EXCELLENT outline of TERMS & TIPS from experts on LED lighting and the evolving technology; click [here](#) for pdf with more links.

June 2016

AMA - BLUE LIGHT SERIOUS HEALTH CONCERNS

BLUE SPIKE from some LED streetlights, cell phones, computers, and TV's, can negatively affect your health according to American Medical Association. AMA Press Release - LED Health Concerns - Light Pollution problems [here.](#)

AMA Compete Guidance to reduce health issues from high intensity lighting - [here.](#)

AZ Doctor raised new LED streetlights & health issues with City of Phoenix on TV Channels 3 and 5. Read problem and solution [here.](#)

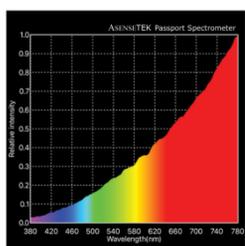
LED Streetlight Retrofit...

"After the city staff reviewed available options, it was determined that the 4,000K CCT color temperature and the perceived increased brightness of fixtures were the primary causes of the negative public reaction.

Several remedial actions were considered, but ultimately in October 2014, the decision was made to replace 650 of the already installed fixtures in residential areas and all remaining LED fixtures with Leotek 19-watt Green Cobra Jr., producing approximately 1800 lumen at 2700 Kelvin (soft-white).

In addition, the installation would increase the number of house-side shields to reduce glare and light trespass" Davis, California article [here](#) by [Volt.org](#) - more [LED RetroFit Streetlights.](#)

Click [here](#) to see City of Phoenix LED street and park lighting rated at 2700 Kelvin.



INCANDESCENT LIGHT BULB

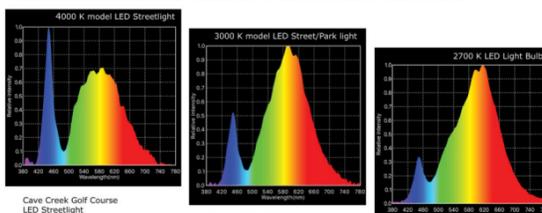


These bulbs are considered "soft-white". The meter indicated the output of: CCT 2816 Kelvin. Very little blue light is within the visual Spectrum shown.

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Comparison of three LED (light emitting diode) light fixtures.

LOWER KELVIN SHOWS REDUCED BLUE SPIKE FROM LED LIGHTS



Cave Creek Golf Course LED Streetlight road to gate streetlights CCT 4368 Kelvin*

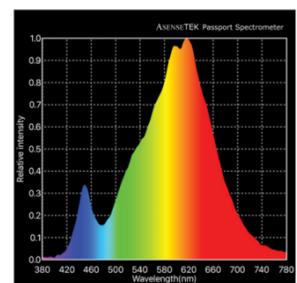
Mountain View Park LED Streetlight test fixture CCT 3011 Kelvin*

Home Use LED labelled 'soft-white' tested light bulb CCT 2780 Kelvin*

*ASENITEK Passport Spectrometer Relative Intensity: 0.1-1.0. Wavelength: 380-780 nm (nanometer) covering the visual spectrum. Analysis of LED fixtures August 2016.

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Click on these to enlarge each one.



CREE LED 2700K

Home Use Light Bulb advertised as "soft-white".

Chart shows the visible spectrum from an ASENIITEK, Passport spectrometer.

This bulb is rated at 2700 Kelvin. The meter showed 2780K.

This LED bulb shows about 30% less blue spike than the 3000K LED light measured in Mountain View Park.

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Cree LED 2700K is a 'soft-white' light bulb for your home. The visible spectrum here is similar to the Cree street lights used in Phoenix.

Edison light bulb was developed after many tests. The incandescent bulbs are at about 2600 Kelvin and the meter shows the visible spectrum that works very well in our eyes.



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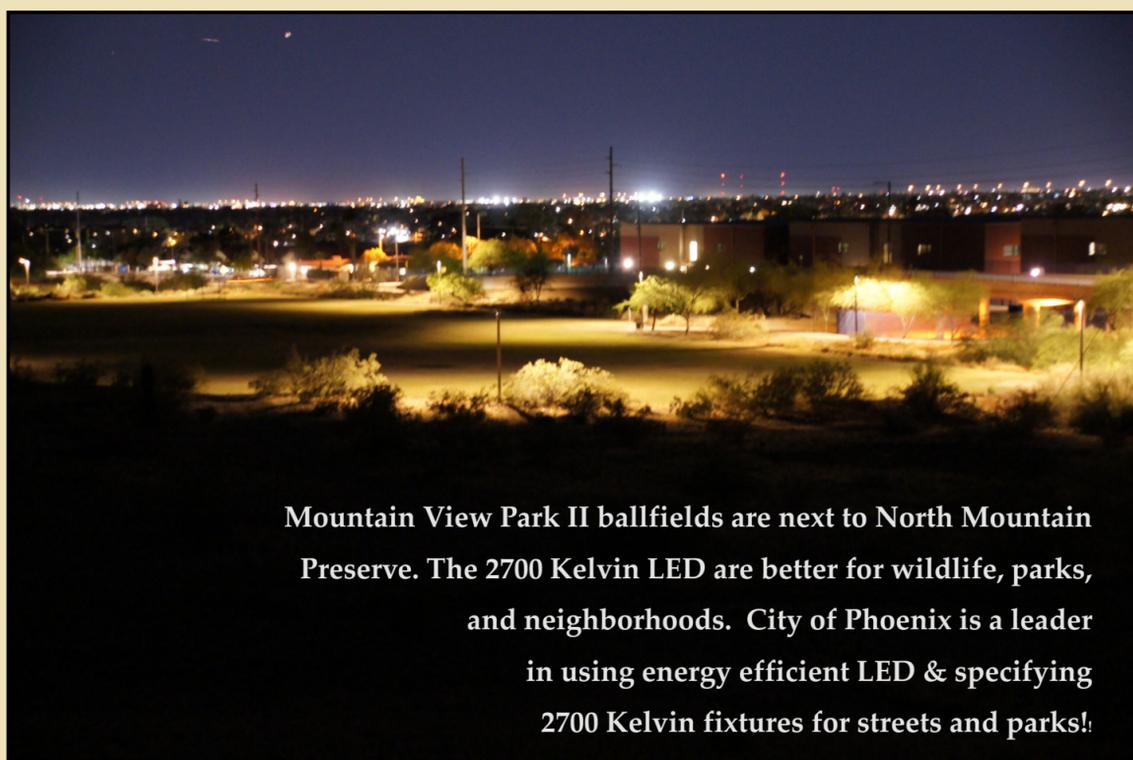
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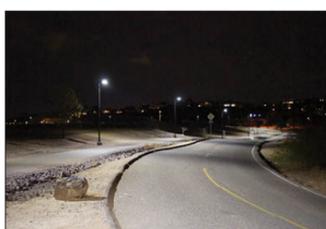


Mountain View Park II ballfields are next to North Mountain Preserve. The 2700 Kelvin LED are better for wildlife, parks, and neighborhoods. City of Phoenix is a leader in using energy efficient LED & specifying 2700 Kelvin fixtures for streets and parks!



MOUNTAIN VIEW PARK received new LED lighting in 2018 designed to use 2700 Kelvin LED. Now most street lights and parks will have soft-white fixtures. Parking lot & playground with various fixtures using 2700K LED.

LED rated at 2700 Kelvin, (soft-white), are good choices for streets and parks.

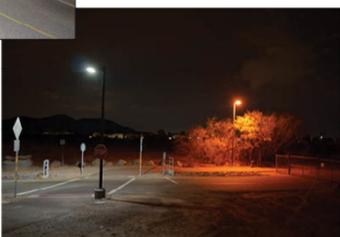
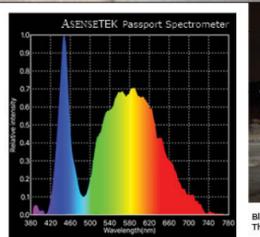


CAVE CREEK GOLF COURSE

This shows the new LED street lights installed along a pathway and road to the golf course (left). Nearby, at the gate, is an older amber colored High Pressure Sodium streetlight (below).

The blue spike emitted by this LED outdoor fixture registered CCT 4368 Kelvin on the light meter. These harsh, LED fixtures are unlike Moonlight.

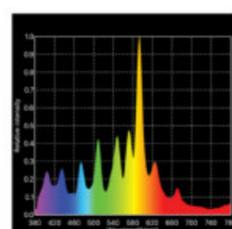
Even with more energy efficient LED fixtures, this is one example of continuous lighting that will increase energy consumption. Current plans are to install about twice as many (35 to 64) LED outdoor light fixtures in Mountain View Park.



Blue spike in this LED streetlight is unique amount other types of lights. This 4000K LED model creates serious health concerns according to the AMA.

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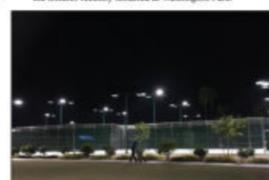
A High Pressure Sodium fixture and the 4000K LED street lights installed on a City of Phoenix Park driveway.



Spectrometer showing spectrum of light generated by the fixtures recently installed at Washington Park.

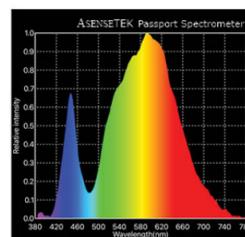
PHOENIX TENNIS CENTER AWARD WINNING FACILITY

Halogen lighting with excellent shielding avoids off-site light pollution. This lighting system is part of the tennis courts remodeling in 2014. These lights provide very good visibility for playing tennis at night and are rated at 3690 Kelvin with very little blue within the visible spectrum shown by the spectrometer.



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PHOENIX TENNIS CENTER has excellent lighting for night time fun and events!



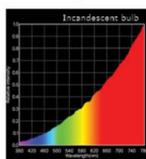
ENCANTO PARK



Encanto Park has historic light fixtures that originally had incandescent bulbs installed. Spectrum of new incandescent bulb is CCT 2830K (right).

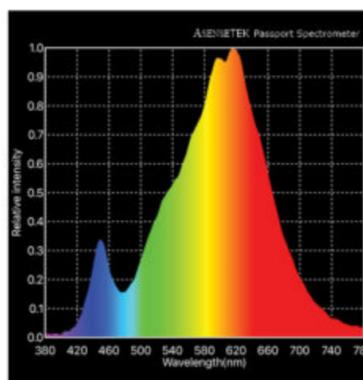
Today, the bulbs have been replaced with more energy efficient LED. The LED is CCT 3418 Kelvin, with a strong blue spike (above).

These two charts show the difference between a traditional light source and the blue spike created by new LED lighting.



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Historic Encanto Park preserved fixtures while replacing incandescent bulbs with 3600K LED bulbs in 2015. In 2016 City of Phoenix chose 2700K LED for future fixtures!



CREE LED 2700K

Home Use Light Bulb advertised as "soft-white".

Chart shows the visible spectrum from an AsenseTEK, Passport spectrometer.

This bulb is rated at 2700 Kelvin. The light meter showed 2780K.

This LED bulb shows about 30% less blue spike than the 3000K LED light measured in Mountain View Park.

LESS BLUE LIGHT - WHEN LED'S ARE AT CCT 2700 KELVIN or lower to 2400K - where eyesight is very good in moderate, outdoor lighting. Soft-white, energy efficient, LED lighting can be a good choice.

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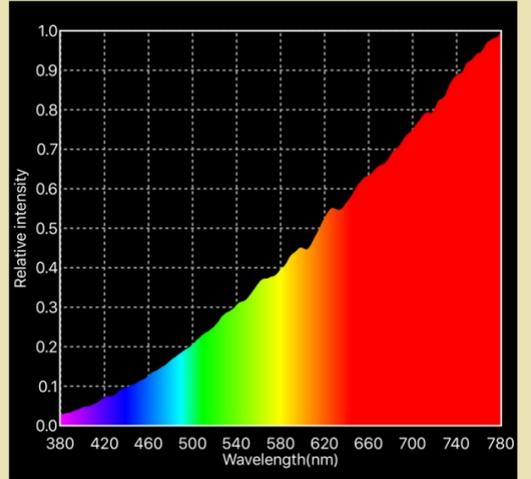
Much less blue with LED rated at 2700 Kelvin. A great choice!



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**GOOD LIGHTING FOR STREETS,
PARKS & NEIGHBORHOODS is
possible as the technology
rapidly improves!**

Right: Thomas Edison invented the incandescent light bulb over 130 years ago. This shows a 'standard light bulb' with a light spectrum that is similar to a rainbow...with very little blue in the normal visible light spectrum.



Above: Chart shows the visible light spectrum of an incandescent light bulb at 2650 Kelvin. ASENSETEK Passport Spectrometer used on all spectrum and Kelvin analysis; learn more [here](#).

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Good Lights

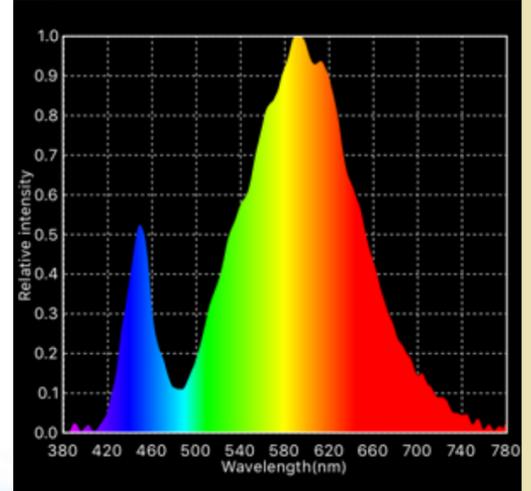
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Smarter LED

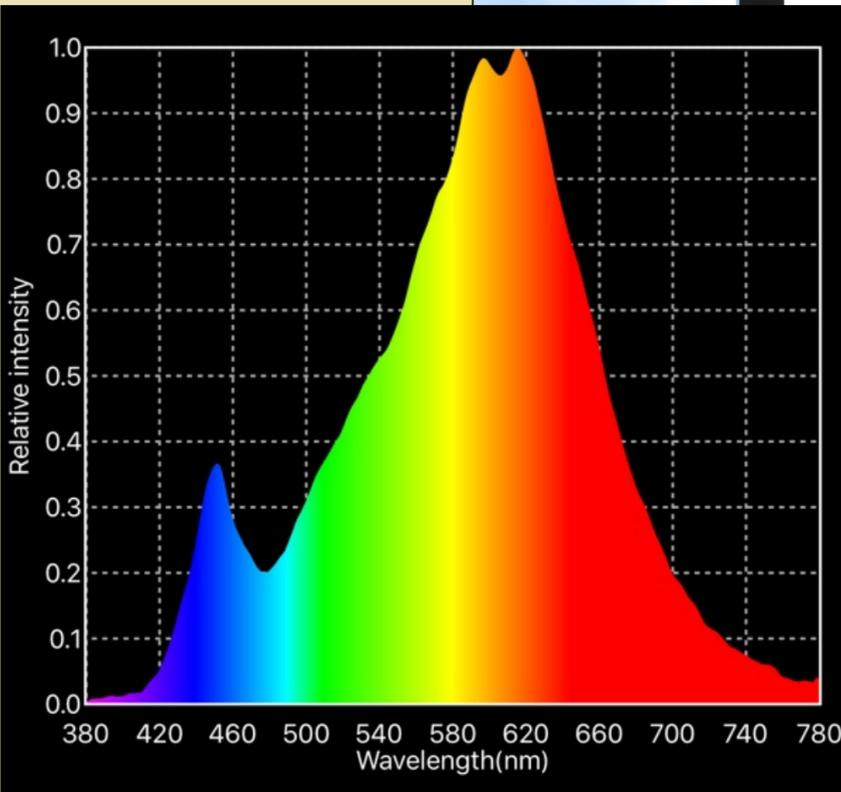
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Light Emitting Diode (LED) light fixture.



Above: The spectrum shows the blue contained in a 3000 Kelvin LED fixture. (Mountain View Park II, test in 2016.)



Left: Is the spectrum of a 2700K fixture showing the significantly lower level of blue.

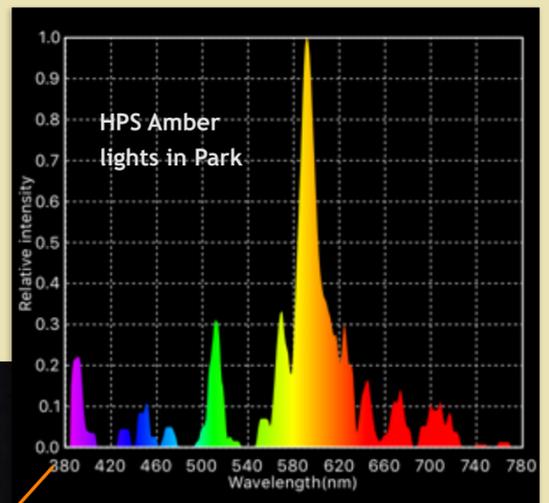
were raised by residents, the Parks Director changed the specifications to 2700 Kelvin - for most uses! While over a dozen parks were already outfitted with 4000K LED lights it is hopeful that the department will be able to replace those fixtures soon.

The City of Phoenix, Street Transportation Department, is replacing all the neighborhood 4000K LED lights with 2700K fixtures!

This shows that 2700K LED light has about 25% less blue in the visible spectrum when compared to 3000K LED. (Note: this fixture was rated at 2863K.)

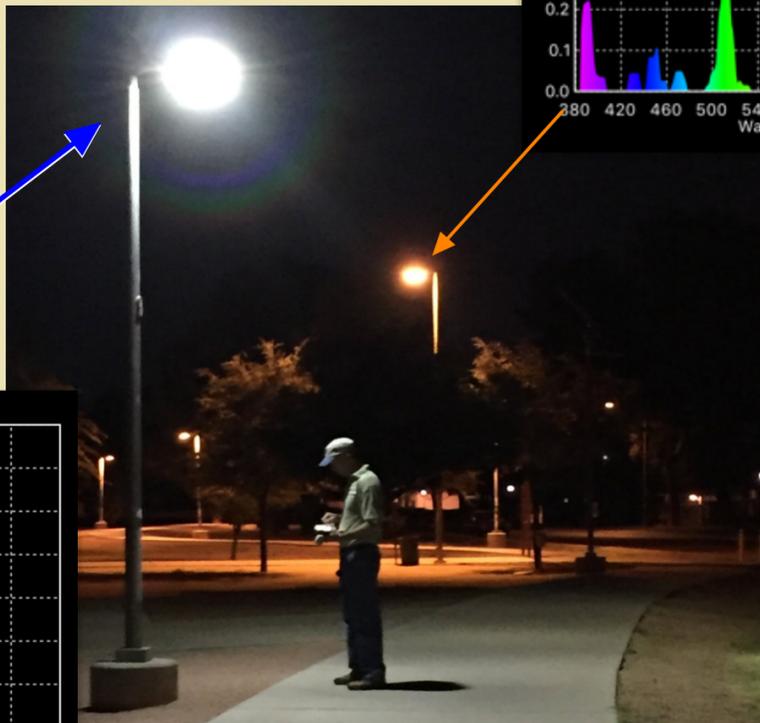
CONSIDER 2700 KELVIN or lower FOR OUTDOOR LIGHTING. This is critical for LED lighting and is good for us plus the 'night time wildlife' which eat lots of insects.

**BAD
BLUE LED**

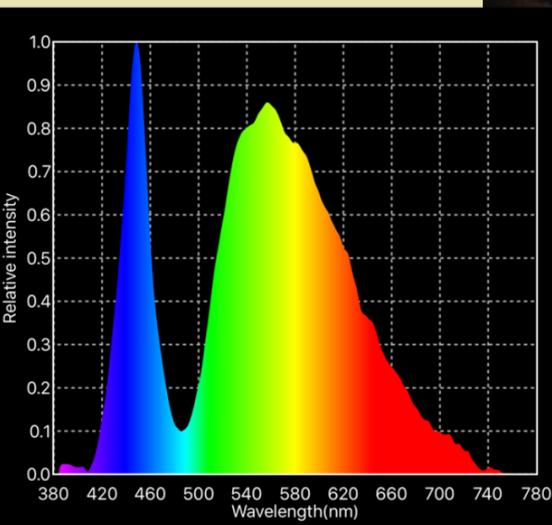


Above: The high pressure sodium (HPS) light bulbs are about 2200 Kelvin.

Left: Colter Park with amber HPS lighting since the 1970's - to save energy and they provided good sidewalk and playground lighting. The test fixture had harsh glare and bad blue LED rated at 4000 Kelvin.



To avoid the harmful blue spike (above) unique to LED lights - CONSIDER 2700K LED for indoor and outside fixtures.



ASENSETEK Spectrum Meter shows visible light spectrum with surprising amount of blue in a 4000K LED park 'test' fixture (2016).



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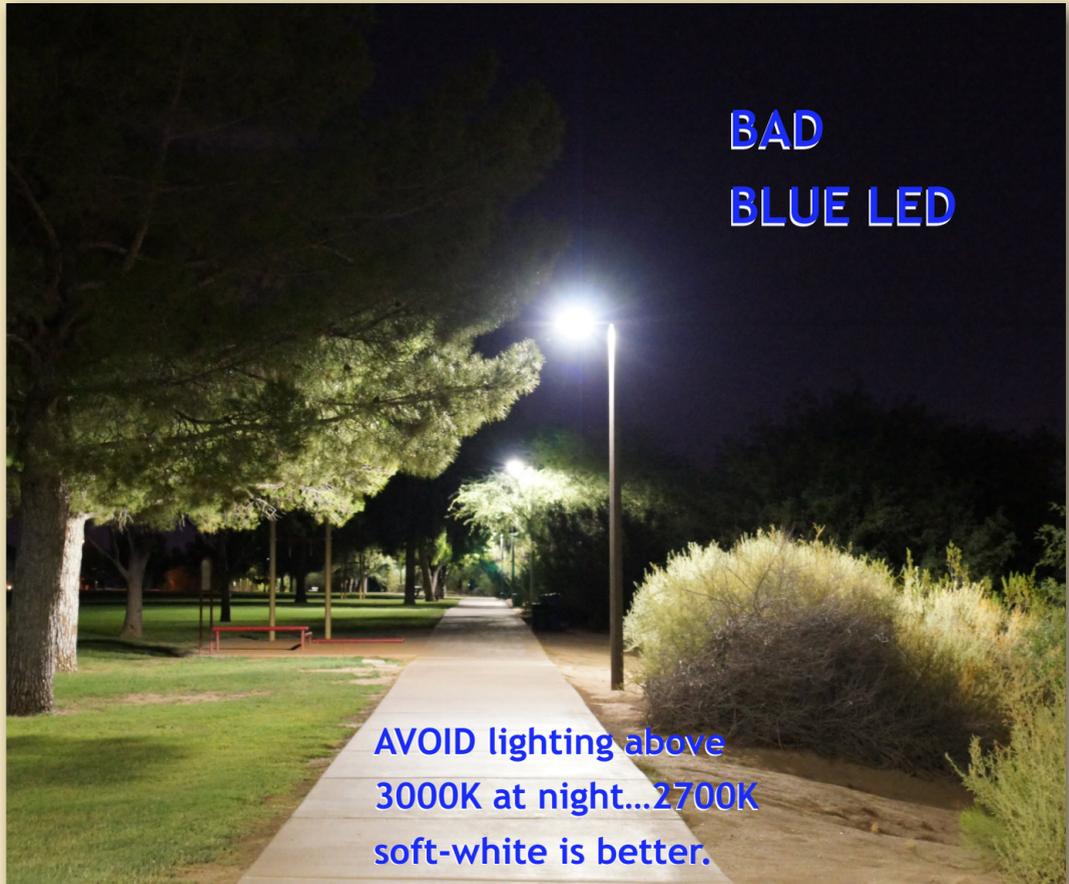
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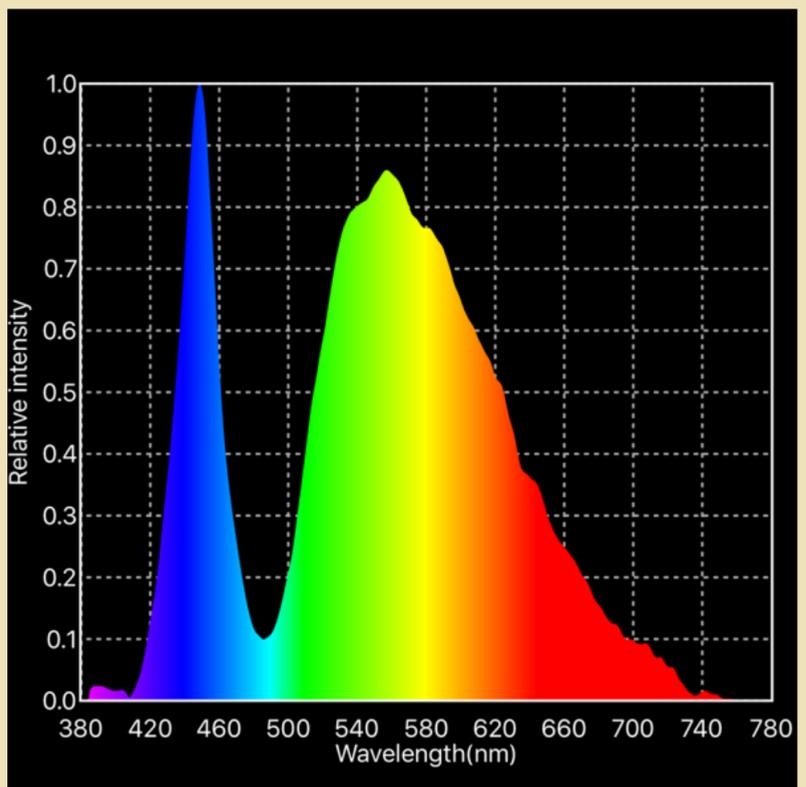
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Above: Moon Valley Park is one that got extensive first generation LED lighting installed. This fixture is a 4000K LED. However some lights within the Park have 5000 Kelvin light emitting diodes installed which have even more blue in the spectrum - see below.

Right: Light meter shows blue spike from a 4000 Kelvin Park light fixture. This may look good in a photograph above; but this 'bright blue white' lighting has been shown to make it harder to see into dark areas at night and is bad for our health.

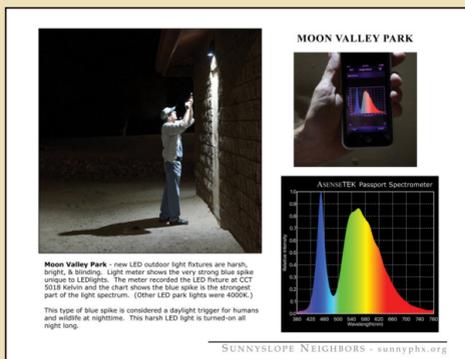


ASENSETEK Passport Spectrometer used on all spectrum and Kelvin analysis; learn more [here](#)

AMA adopts better LED lighting proposal June 14, 2016. Annual Meeting of the American Medical Association (AMA) adopted guidance for communities on selecting among LED lighting options to minimize potential harmful human and environmental effects. [See here.](#)

Doctors Issue Warning About LED Streetlights: CNN article [here](#). The blue spike in LED streetlights is problematic for humans and wildlife.

Chart [here](#) shows result of spectrometer measurements of LED 4000 Kelvin streetlight and the natural Moonlight. Blue makes 'daylight' but is bad for us at nighttime.



[Enlarge jpg to see more on Moon Valley Park and the unfortunate characteristics of 'first generation' bad blue LED lighting \(2017\).](#)

BLUE LIGHT has a DARK SIDE. Article by Harvard Health Letter covering blue light inside and outside your house - [read it here](#). Avoiding bright, blue-white, lighting at night and avoiding blue from cell phones and TV's. Apps can now help you reduce blue at night from cell phones. Filter glasses can help with late night TV. Be smart with lighting at night.

This [video](#) is from **Russel Reiter, MD, PhD** retired. The doctor explains the eye sensor and our body's clock that can be mis-adjusted by bad nighttime lighting. We now are learning new LED streetlights are 'daylight' models.

New cobra shaped LED streetlights at 3000 Kelvin or lower, are available since 2016. More options today! City of Phoenix avoids expensive mistake and chooses to reduce the blue in LED with new 2700K LED soft-white fixtures!!! Some cities are even converting 4000K to 2700K LED models to *restore the quality of outdoor life* with better streetlights.

Tucson picked LED street and neighborhood lighting below 3000 Kelvin see and read how they chose [better LED lighting here](#).

Bad 'daylight' LED streetlights at nighttime

From 2012-16 more than 1,500 new LED streetlights had been installed in Phoenix as old amber bulbs needed replacement. City of Phoenix chose bright white 4000K GE brand LED cobra fixtures. Many neighborhoods begun raising concerns about the quality of life for all of our city. Bright white 4000 Kelvin LED nighttime makes it hard to see into darkness and is unhealthy. Bright daylight LED all night long is bad for our health and reduces safety.

A 4000 Kelvin LED light fixture is being tested in Mountain View Park. When people see the light in real life, rather than in a photo, they see the fixture is 'blinding', 'harsh', and 'horrible'. It makes seeing into the Preserve impossible since the light is too bright. Eye pupil blinded by the LED light.

Here are some neighborhoods struggling with new LED streetlights that are painful. (These are from 2015-16.)

[Las Vegas](#).....glare from new LED streetlights creates near accident for Council member.

[New York](#)....tough luck, daylight all night. LED Streetlights in Brooklyn Are Saving Energy but Exhausting Residents.

[Vancouver, BC](#).....New 4000K LED streetlights spark concerns.

PHOENIX got the opportunity to make a better choice now since more types of LED streetlights are available. GOOD NEWS - 4000 Kelvin streetlights were rejected by residents for our streets, parks, and neighborhoods via the [city survey](#). But survey didn't even test the better 2700K soft-white fixture. Folks that saw **2700K LED lights** quickly picked it as the best option to save energy, better safety, and for better visibility. Great choice by PHX also!



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About Us

SUNNYSLOPE is a neighborly area we love. Once in the county, today Sunnyslope is inside the City of Phoenix - some even call the area 'downtown'. This area is connected to North Mountain and Shaw Butte (the mountain further north) and is north of Northern Avenue and is considered east & west of Central Avenue.

Positives for Sunnyslope include schools, restaurants, and a micro-brewery along with improvements to Mountain View Park and trail rehab in the Mountain Preserve. A garden area finally opened with the help of many folks so start growing your favorites at Mountain View Park! Even new home construction is occurring while rehabing older homes has begun also.

We are friends, family, and neighbors here in the heart of Phoenix. Concerns about LED streetlights translated into a solution. Today, other activities exist including solar ovens!

Here updates cover the problem, solution, and now 2018-19 improvements being made with LED streetlights. Hopefully, the attachments here cover the LED street and park lighting decisions as the technology matures. The transition to LED lights is resulting in new fixtures city wide.

Sunnyslope Neighbors

HOT WEATHER

BE CAREFUL: Always have 'gallons' of cool drinking water at home and in your car.

On hikes double your water and go for a short hike early. Carry extra water for your dog too! At home do chores early and lay low in the afternoon.

BE CAREFUL, check on your neighbors - and make sure the AC unit / or evap. cooler is AOK too - change filters!

> **DOGS** are not allowed in the Preserves when temperature is over 100 degrees.

Unique Restaurants Near or In The Slope!

North Mountain Brewing
Dunlap/5th Street (back door off Eva St.) - [here!](#)

Mi Pueblo (Baja) [here!](#)

Rocket Burger Shop (sodas too) [here!](#)

Timo Wine Bar [here!](#)

Wheel & Spoke [here!](#)

Ladera Taverna y Cocina [here!](#)

THAI THAI Kitchen [here!](#)

NEWEST = Little Miss BBQ
Sunnyslope [here!](#)

SUN OVEN



WOW!
Oven at 340 degrees during sunny weather year around!



This Sun Oven is a great design that can heat to 250-400 degrees winter and summer. Many other box style solar ovens can work in Sunnyslope also. Lots of sunshine here!

This oven avoids heating up the house when making dinner. Bakes great brownies, banana bread, etc.!

Making a solar oven out of a couple large boxes and clear plastic 'window' is a great way to get started. Arizona Science Center does solar ovens and you can find more under 'solar cooker' [here.](#)

GREAT Solar Oven for baking everything!
Sun Ovens International Inc.,
Elburn, Illinois USA
www.sunoven.com