BLUTECH LENSES

Frequently Asked Questions:

1. Why is blue light harmful to the retina?

Blue light is short wavelength visible light and generates the highest energy of all visible light. Unlike UV light which is absorbed by the cornea and crystalline lens, when blue light enters the eye it reaches the retina. When blue light hits the retina, its high energy mixes with oxygen creating a destructive force that destroys photoreceptor and retinal pigment epithelium cells (RPE). This is much like cold and hot air mixing together to create a destructive storm. Over time, this process can lead to Age-related Macular Degeneration, (AMD).

2. Doesn't a UV filter block out all harmful light that can damage the eye?

UV light includes wavelengths up to 400 nm. A UV filter will block out these wavelengths of light but allow High Energy Visible (HEV) blue light (400 - 500 nm) to reach the retina. BluTech Lenses block all UV radiation and filter high energy visible light in proportion to the damage caused. For example high energy visible wavelengths of light are more harmful to the retina at 410 nm than at 420 nm, than at 430 nm and so on.

3. Isn't blue light good for the eye?

Yes blue light is responsible for controlling your circadian rhythm…your sleep cycle. Blue light is also part of the visible light spectrum responsible for your color vision. So it is important for our bodies to be exposed to blue light, in particular at the longer end of the blue spectrum from 450 to 500 nm. BluTech Lenses are designed with nature in mind by gradually allowing more blue light into the eye as the wavelengths become longer. This is why BluTech Lenses provide natural color vision and comfortable vision.

4. How much blue light are we exposed to?

We are exposed to more blue light today than ever before in history. Outdoors, the sky is blue (from blue light) but today we are also faced with an indoor blue light hazard. We light our homes and offices with energy efficient CFL and fluorescent bulbs that have a high blue spectral emission. Our computers, televisions, tablet computers and Smartphones are backlit with fluorescent light. These last two are especially dangerous as they are held close to our eyes. So now more than ever, it is important to protect our eyes both indoors and out.

5. How do BluTech Lenses work?

The eye has two natural pigments that provide protection. Ocular Melanin found in the iris, choroid and RPE and Ocular Lens Pigment (OLP) found in the crystalline lens. When we are born we have no OLP in our crystalline lens, but we have ocular melanin. As we age OLP increases with cataract formation until vision is affected, and then it is removed during cataract surgery. Conversely, as we age we lose our ocular melanin, with light colored eyes (blue, green, hazel) losing it sooner than dark brown ones. OLP and ocular melanin protect the eye from blue light exposure. Blu –Tech lenses contain both Ocular Melanin and Ocular Lens Pigment, filtering the harmful effects of light below 500nm. BluTech Lenses are designed to protect our eyes from a lifetime of blue light exposure.

6. What light sources give off blue light?

Up until recently most high energy and damaging blue light was given off by the sun. A sunglass with UV protection does not protect your eyes from these rays of light. However over the past 10 years as we have adopted backlit LED flat screen technology in our televisions, smart phones, computers and tablets and we have deregulated incandescent light bulbs in favor of fluorescent and CFL energy efficient lighting, our exposure to high energy blue light indoors is now at the highest level in the history of mankind. All of these light sources give off high levels of blue light and our children are being exposed to a lifetime of high energy damaging blue light rays that most adults today did not have to worry about. BluTech Lenses indoor lenses will protect the retina from these damaging rays without distorting color vision.

7. Don't yellow dyes achieve the same effect?

While it is true that yellow dyes block blue light, they can also alter color vision and cause vision to become uncomfortable. The technology in BluTech Lenses have been developed with exacting standards providing just the right amount of high energy blue light filtration for maximum protection yet not affecting color perception. If you take the Farnsworth Munsell 100 Hue color test you will find that BluTech Lenses perform to the same level of color perfection as natural vision while most other yellow dyes and coated lenses fail.

8. How are BluTech Lenses different than Blue Blockers?

Blue blocker lens technology did not filter blue light they blocked blue light in addition to filtering some of the green, yellow and red part of the spectrum. As a result blue blockers distort color vision and in fact there are thousands of litigation cases resulting from accidents related to wearing "Blue Blockers". The science behind BluTech Lenses combines just the right combination of ocular lens pigment (OLP) and melanin, our bodies natural defenses against harmful rays of light. This combination has been optimized with each lens polymer that contains BluTech Lenses technology to provide clear, crisp and comfortable vision without distorting colors.

9. When should BluTech Lenses be worn?

BluTech Lenses are available for both indoor and outdoor use, with outdoor lenses being polarized for extra glare protection. In addition, neuroscientists have discovered novel light-sensitive cells in the eye that detect light. These cells are separate from those we use for vision and contain a photo pigment called melanopsin that is particularly sensitive to blue light. Scientists think this light- detecting mechanism regulates our sense of night and day. Exposure to blue light at night suppresses melatonin, our sleep hormone, interfering with our ability to fall asleep. So while BluTech Lenses can be worn throughout the day, they are especially beneficial to those who work on computers, tablets, or smart phones in the evening hours before bed.

10. How do BluTech Lenses help people who already have age related macular degeneration (AMD)?

AMD is a chronic degenerative disease that cannot be reversed. In the dry state BluTech Lenses can help retard the progression of the disease providing the AMD patient more years of useable vision, critical to maintaining a higher quality of life. BluTech Lenses are one of several controllable factors that an AMD patient should embrace. Others include healthy diets, take MacuHealth with LMZ_3 to replenish macular pigment, quit smoking and exercise.

11. Can BluTech lenses be AR coated?

Yes. The indoor lenses can have a premium AR coating applied, and the outdoor polarized lenses can have an AR coating applied to the back surface to further eliminate glare.

12. Can BluTech lenses be drill mounts and grooved?

Yes. The Hi Impact material is very easy to drill mount and groove. It will not fracture or chip.

13. Are BluTech Lenses available in progressive designs?

Yes BluTech Lenses are available in digital back surface designs such as Kodak Unique, Precise PB, Precise PB Short, and Kodak Monitor View Computer lenses, VSPOne UNITY PLxtra and PLxtreme, PLx Progressive Lenses, UNITY SVxtra, SVxtreme, SVx Single Vision Lenses and UNITY CVx Computer Vision Lenses

14. Will BluTech Lenses be available in FT designs?

Yes both the Indoor and Outdoor designs will be available in FT 28 designs.

15. How do I order BluTech Lenses?

Request BluTech lenses from your local / favorite lab and they will place the order to be filled by Kodak (Signet Armorlite) or by any VSPOne lab or VSP Partner lab. If your local lab has any questions on ordering please have them contact David Israel at: david.israel@youreyesolutions.com

16. What do BluTech Lenses cost?

Contact you lab to obtain BluTech Lens pricing.

17. What Lens Material(s) is BluTech Available In?

BluTech Lenses are currently available in Hi Impact mid index plastic for both indoor and outdoor applications.