



# BPI<sup>®</sup> THERAPEUTIC TINTS

Tint Your Own Therapeutic Lenses With BPI<sup>®</sup> Therapeutic Tints.

Order Therapeutic Lenses from BPI<sup>®</sup> Laboratories.

Send Your Prescription Lenses To BPI<sup>®</sup> Laboratories For Therapeutic Tinting

Complete Frames With Therapeutic Lenses Or Clip-ons Also Available.

Now your patients can select their own frames instead of goggles!

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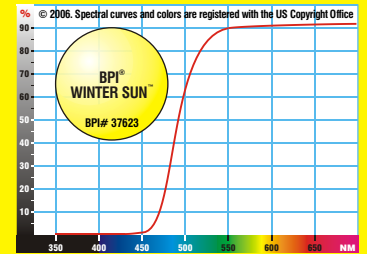
## BPI<sup>®</sup> FILTER VISION™ 450nm (BPI<sup>®</sup> Winter Sun™)



BPI# 37870 Tint  
BPI# 99900 Frame and lenses

### USES:

- Night Blindness
- Macular Degeneration
- Retinitis Pigmentosa
- Pre-operative Cataract
- Forensic Science
- SAD (Seasonal Affective Disorder)



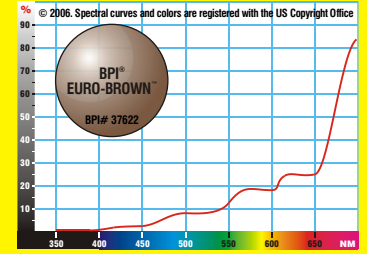
## BPI<sup>®</sup> FILTER VISION™ 480nm (BPI<sup>®</sup> Euro-Brown™)



BPI# 37622 Tint  
BPI# 99900 Frame and lenses

### USES:

- Macular Degeneration
- Retinitis Pigmentosa
- Pre-operative Cataract
- Forensic Science



## BPI<sup>®</sup> DIAMOND DYE™ 500nm

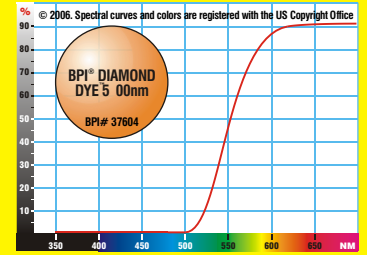


BPI# 37604 Tint  
BPI# 99900 Frame and lenses

## Blue Barrier<sup>®</sup> Tint

### USES:

- Macular Degeneration
- Retinitis Pigmentosa
- Post-operative Cataract
- Aphakia/Pseudophakia
- Forensic Science
- Dentistry



## BPI<sup>®</sup> DIAMOND DYE™ 540nm

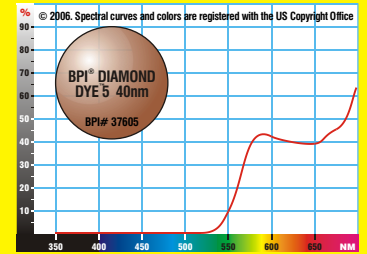


BPI# 37605 Tint  
BPI# 99900 Frame and lenses

## Blue Barrier<sup>®</sup> Tint

### USES:

- Macular Degeneration
- Post-operative Cataract
- RK-PRK
- Primarily for outdoor use.



## BPI<sup>®</sup> DIAMOND DYE™ 550nm

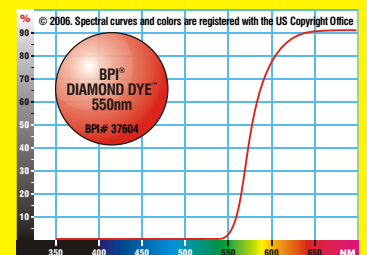


BPI# 37604 Tint  
BPI# 99900 Frame and lenses

## Blue Barrier<sup>®</sup> Tint

### USES:

- Achromatopsia
- Retinitis Pigmentosa
- Albinism
- Post-operative Cataract
- Forensic Science



## BPI<sup>®</sup> MONOCHROME 600nm™

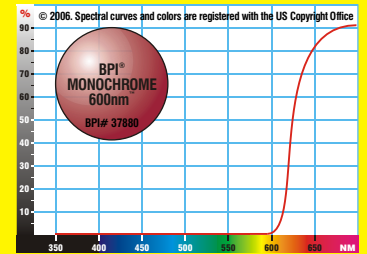


BPI# 37880 Tint  
BPI# 99900 Frame and lenses

## Blue Barrier<sup>®</sup> Tint

### USES:

- Achromatopsia
- Color blindness
- 3-D glasses
- Dark room filters
- Night vision adaption



## BPI<sup>®</sup> DESIGNED SPECTRUM 4/5/6™

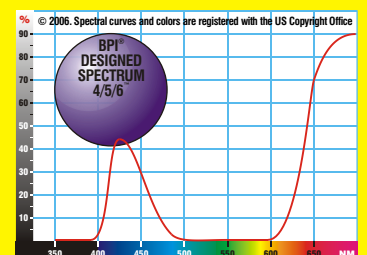


Frames and cases shown are for illustration use only

This color is only available as tinted lenses from BPI<sup>®</sup> Lens Tinting Laboratories

### USES:

- Diabetic Retinopathy
- Albinism
- Macular Degeneration
- Cancer therapy
- Chlorophyll studies



**BPI FILTER VISION™ DESIGNED SPECTRUM™ TINTS**

# BPI. THE INVENTOR OF THE ORIGINAL BLUE LIGHT BLOCKING TINTS

BPI® Filter Vision™ Blue Barrier® Therapeutic Tints were developed to provide maximum blue light protection. Blue light is the dominant component of skylight and a major cause of glare. Aging and a number of ocular conditions can make eyes extremely sensitive to what is normally seen as moderate glare, and these same pathological conditions also increase the possibility of veiling glare caused by blue light scatter within the eye.



## 5 Different Blue Light Blocking Therapeutic Tints

If you want to reduce glare and relieve discomfort for your patients, there is one simple thing you can do; filter out UV and blue light. This can benefit patients with conditions such as;

- Developing cataracts
- Macular degeneration
- Aphakia and pseudophakia
- Diabetic retinopathy
- Glaucoma
- Aniridia
- Albinism
- Optic atrophy
- Corneal dystrophy
- Retinitis pigmentosa

By reducing glare you usually improve contrast and functional acuity.

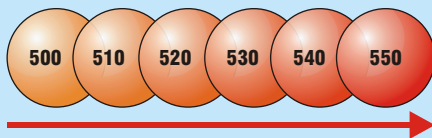
### Research has shown that:

- 80% of patients who wear anti-glare lenses call the lenses the best sunglasses they've ever worn.
- 80% experience sharper vision, better depth perception.
- 87% report significantly reduced glare and haze.
- 94% call the lenses beneficial.

## All BPI Blue Barrier® Tints Block 100% of UV Light

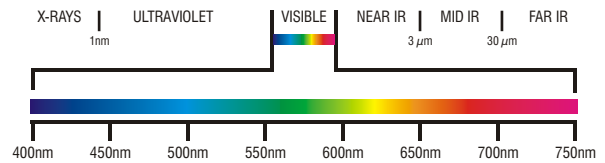
### ONE BOTTLE DOES IT ALL!

BPI® Diamond Dye 500/550™ can make any filter between a 500nm cut-off and a 550nm cut-off. The cut-off is simply determined by the amount of time the lens is left in the tinting solution. At 500nm the lens will be a bright orange color. At 550nm the lens will be orange red.



BPI NUMBER	PRODUCT NAME	COLOR	CUT-OFF	SIZE
BPI# 37622	BPI® Filter Vision 480™ BPI® Euro Brown™	Brown	480nm	4 oz/118ml
BPI# 37604	BPI® Diamond Dye 500/550™	Orange/ Red	500nm to 550nm	4 oz/118ml
BPI# 37605	BPI® Diamond Dye 540™	Brown	540nm	4 oz/118ml
BPI# 37880	BPI® Monochrome 600™ Deep Red™	Ruby Red	600nm	4 oz/118ml

## Why blue light can be harmful to you



$$\text{(Energy per photon)} = \frac{\text{(Planck's Constant)} \times \text{(Speed of Light)}}{\text{(Wavelength)}}$$

At 380nm, the energy per photon is 3.27eV  
At 760nm, the energy per photon is 1.63eV

Blue light has almost twice the energy per photon as red light at the other end of the visible spectrum. This is the same energy that causes sunburn and cataracts.

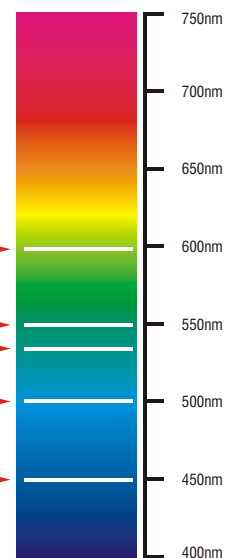
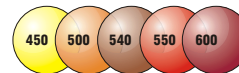


BPI® Monochrome 600™ blocks all light below this point

BPI® Diamond Dye 550™ blocks all light below this point  
BPI® Diamond Dye 540™ blocks all light below this point

BPI® Diamond Dye 500™ blocks all light below this point

BPI® Filter Vision 450™ blocks all light below this point



## How to tint BPI® Designed Spectrum® lenses



BPI® Filter Vision Blue Barrier® lenses can be made in any lens tinting system. Mix the 4 oz bottle with enough water to make a quart of solution. Heat to 200 -205°F (93-96°C) and immerse the lenses until the correct density has been attained.

To precisely determine the transmission characteristics of any tint, we recommend testing the lens in a spectrometer like the BPI® Spectrometer™ shown here.

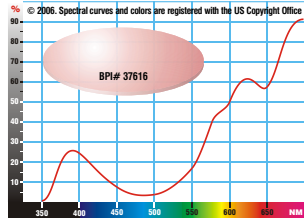


### NOTE

BPI® Blue Barrier® lense do not pass ANSI traffic signal requirements. Check before driving. Patients should be sure that they can distinguish the colors of traffic signals before driving. Like any strongly tinted lenses they should not be worn for night driving. Any lens marked as 550 or 600nm are not recommended for day or night driving.



## Stop Blepharospasm & Migraine!



**BPI® FL-41™ has been found by independent researchers to be beneficial when treating photophobia, blepharospasm and migraines by blocking blue and green wavelengths.**

### An extract from Neuro-Ophthalmology

Article written by Marianne Doran. November/December 2005  
Rose-colored sunglasses.

Preliminary research at the University of Utah suggests that specially tinted lens may help some people with photophobia. Anecdotally, many photophobic patients prefer an FL-41 tint on their sunglasses instead of green or yellow. The FL-41 tint, which has a pinkish look to it, is a mixture of colors that blocks the blue-green wavelengths.

"We randomized patients with blepharospasm to wearing FL-41 sunglasses for two weeks and then to wearing plain sunglasses for two weeks," said Dr. Katz. "The patients filled out questionnaires at the end of each period. We found that patients with blepharospasm definitely preferred wearing lenses with the FL-41 tint to wearing conventional sunglasses. So there does seem to be some therapeutic benefit."

In a new study, the researchers have used electromyography to measure blink frequency, duration and amplitude in blepharospasm patients while they read for five minutes at a time with regular eyeglasses, glasses with a light gray tint or glasses with an FL-41 tint. The results are still being analyzed, but Dr. Katz said they appear to provide more objective evidence that FL-41 does reduce blepharospasm.

"FL-41 lenses are non-invasive, they have no side effects and they're not expensive," Dr. Katz added. "So it's a cheap, easy way to improve the lives of these patients, who in some cases are very disabled by their disease."

Be sure glasses block blue-green. FL-41 lenses are available in optical shops, but Dr. Digre cautioned that some so-called FL-41 lenses are not the real thing. "You really have to know whether the lenses are real or not," she said. "Some lenses can look like FL-41, but they don't act like it. We have done spectral analysis of our lenses to make sure they are blocking the right light".

### Testimonial letter received 17 March 2006.

I am a patient of Dr. K..., and earlier in 2006 I got FL-41 lenses. After learning this, Dr. K.... asked that I provide FL-41 information that others could use. Besides Blepharospasm, I also have Severe Dry Eye Syndrome and Photophobia. I have needed to wear dark-tinted lenses even indoors for years, and extremely-dark wrap eyeglasses when outdoors or in an auto. I offer the following information on FL-41 lenses:

I learned about the FL-41 lenses from the BEBRF Newsletter....

.... THEY ARE WONDERFUL! I noticed an immediate improvement in my ability to use my eyes with much less strain and pain.

The FL-41 dye tints lenses a soft red, and the dye allows others to see your eyes (which my formerly dark-tinted lenses did not). This ability to make eye contact has been a great improvement for my interpersonal communications.

**The extracts printed on this page have been written by independent researchers. BPI® does not take any position on these uses and benefits of it's products. BPI® manufactures these products as an aid to further research.**

## More references to the therapeutic use of tinted lenses

### Asperger's Syndrome and Tinted Lenses

Extracted from "Autism An inside-Out Approach"  
By Donna Williams

"Tinted lenses, specifically designed to combat visual-perceptual problems are another 'technique' that comes from an experience-based approach. The Irlen technique is a worldwide technique of assessing, fitting out and producing these lenses (which they refer to as Irlen Filters). Another technique being used by some specialists in the area of ophthalmology (the study of visual-perception) is the color-imitator technique. Both of these techniques use tinted lenses, or filters, to filter out certain light frequencies in order to reduce information overload through the eyes. Assessment for the correct tints within the Irlen Method involves looking through tinted lenses (through which one may look at the page or around at the environment or faces) and may be a more precise method of assessing when a tint is effective. The Color-imitator technique is primarily designed to deal with problems with the printed page and involves the shining of a colored light onto the printed page to assess which tint may be appropriate for lenses - a method which may be questionable in its accuracy. By reducing visual overload the brain can better process for meaning what the eyes see. These lenses can also have a secondary effect of reducing hypersensitivity to bright light and also in helping to reduce some of the 'interference' (the visual-perceptual equivalent of 'white noise') that can happen with visual hypersensitivity and visual-perceptual problems.

One of the other benefits of these tinted lenses, or 'filters', is that they may also improve functioning in other Systems, such as processing for meaning, what is heard or tasted or smelled or improving tactile processing and processing of body messages. This is because it is sometimes the case that other systems are forced to compensate for an overloaded system.

Because visual processing counts for around 70 per cent of all information processing, if it is overloaded, the effects upon these other systems can be quite extreme. When the burden upon visual processing is removed the burden on these other systems may also be lessened quite significantly. In other cases, where compensation by other systems has not occurred, impairments in those other systems might remain independent and fundamentally unaffected".

### Parkinson's Disease and Tinted Lenses

Extracted from "Visual Cues And Parkinson's Disease"  
By Thomas J. Reiss D.P.M.

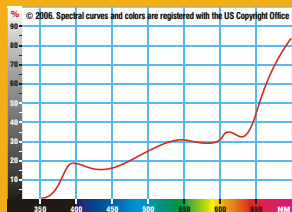
"The inability to process low speed changes in velocity will impact most prevalently on the motion of objects which are furthest away from the peripheral or central vision of the observer. This is because the virtual motion of objects (rate of expansion or rate of peripheral optical flow) varies inversely with their distance from the observer. Peripherally placed blue filters has a myopic effect, reducing depth of field. What little peripheral data remains is obscured by making the world monochromatic. The net result is the elimination or significant reduction of data for peripheral processing. The effect is to filter out most of the peripheral data which was providing erroneous visual feedback, but it has not been replaced with normal sensory feedback and of greater significance is the fact that simultaneous task performance remains compromised. Clinically this means that suppression of dyskinesia can occur with blue filters because the brain no longer has to try and generate ambulation consistent with irrational visual information but it requires conscious attention and breaks down if the subject must contend with competing stimuli. In addition blue filters also seem to impact the autonomic nervous system... ..There is much anecdotal and some published data to support this".

### Tinted Lenses and Dyslexia

Researchers have found that reading through blue filters helps 80 percent of the children read better, and 8 percent are helped by red filters. Exactly how the filters help the problem remains a mystery. The nerve cells of the fast magno pathway are inhibited by diffuse red light, so that a blue filter may remove enough of the red in what a dyslexic person sees to thus allow the magno cells to work normally. At the 1995 Annual Meeting of the American Academy of Optometry in New Orleans, Harold A. Solan, O.D. M.A., a leading researcher and practitioner in the area of children's vision training, presented the results of his most recent research project. He found that 87% of reading disabled children showed an improvement in comprehension while reading with blue filters. Dr. Solan and his associates (Julie Brannan Ph.D., Anthony Ficarra O.D., Robert Byne O.D.) focused their attention on children with a specific reading disorder (SRD).

# BPI® SPECIAL APPLICATION TINTS

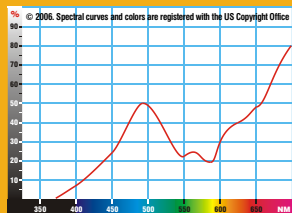
Due to their specific light frequency absorption and areas of transmittance, these specialized tints increase visual acuity for the sports participant and the spectator.



## BPI® GOLF TINT™



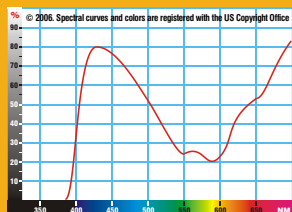
Green with brown overtones. Its light frequency absorption was specially designed to increase the ball's contrast against the blue sky and the fairway.



## BPI® GOLFER ADVANTAGE™



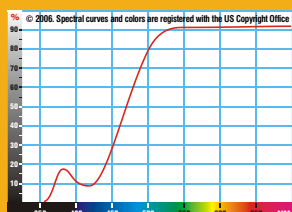
This tint enhances outdoor shades making it easier for golfers to see fairway contours and read the slopes and curves of greens. BPI® Golfer Advantage™ is a forest green color.



## BPI® GOLFER BLU™



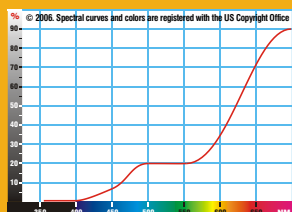
Common golf ball colors are amplified so golf balls are easy to find and easy to track. The ball is highlighted against the green. BPI® Golfer-Blu™ is a blue-lilac color suitable for bright summer days.



## BPI® TENNIS TINT™



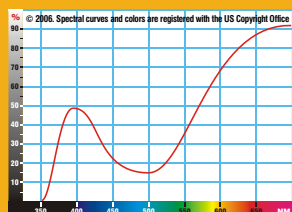
Yellow that spectroscopically matches the yellow color of the tennis ball. Blue is absorbed, highlighting the ball and increasing contrast and visibility against background colors.



## BPI® SPORT TINT™



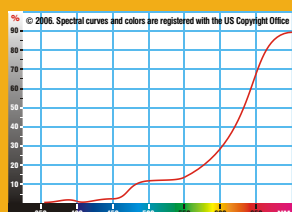
Brown with a greenish-bronze flare. Designed for heightened contrast ability. For use especially while boating and for general spectator activities.



## BPI® SKEET TINT™



Reddish-orange with a tan flare. For the expert who wants to increase his skill when shooting. Increased background lighting brings the target visually closer for sharper distance estimations.



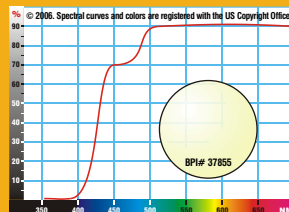
## BPI® SKI TINT™



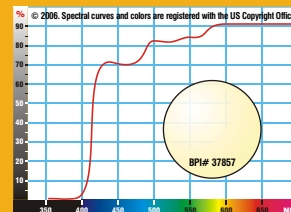
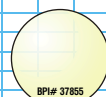
Brown with a red-orange flare. It absorbs light in the ultraviolet region as well as the blue and violet from the snow and sky. Depth perception is increased.

BPI® EVA® Tints can reduce eye strain caused by:

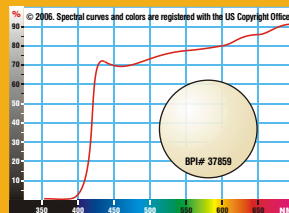
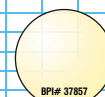
- Computers
- Reading
- Office work
- Fluorescent lights



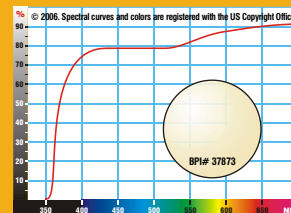
## BPI® EVA® 1 TINT™



## BPI® EVA® 2 TINT™



## BPI® EVA® 3 TINT™



## BPI® EVA® 4 TINT™



Now you can have the most comfortable filter to wear for all of your office and indoor tasks. The BPI® EVA® lens is UV safe. It reduces glare, eye strain and visual haze by attenuating those light frequencies most annoying to the eye. The four BPI® EVA® tints are cosmetically attractive, light shades that increase an individual's functionality and visual comfort.

BPI® EVA® lenses are a revolutionary new filter system that promote visual synchronization between the eye's pointing system and the eye's information gathering system.

A study by the National Institute of Occupational Health and Safety shows that nearly 90% of employees who work with computers for more than 3 hours a day suffer from some form of eye trouble.

Laboratory and office environment testing have proven that the EVA® filter system increases comprehension, reading speed and reduces eye strain and reading errors.

The different EVA® filters either slow down or speed up the visual system to allow the eye to point more efficiently and the visual information that is gathered to be transported to the processing areas of the brain. When the pointing and information visual systems are in synchronization, visual stress is minimized and proper visual processing functionality occurs.

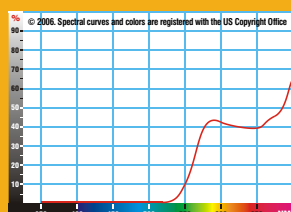
One of the indicators for a visual system at rest is a normal blink rate. This allows lubricating oils and enzymes produced by the glands that line the eyelid to be released, thus easing eye strain.

When computer users sit in front of a screen for an extended periods, they blink less causing eye moisture to evaporate. The result is a condition called 'dry eyes' which manifests itself in numerous ways including itching, burning, heavy, blurry, gritty or fatigued sensations, double vision and color fringes.

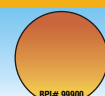
Often those suffering from dry eyes will begin to arch their forehead as they strain to see more comfortably and end up with headaches from the unnatural position.

## BPI® LORGNETTES™ & LORGNETTE DISPLAY THERAPEUTIC TRIAL LENS SET

BPI® Filter Vision™ and EVA® Tints are also available as Lorgnettes for trial testing patients. A white display that holds six BPI® Lorgnettes™ is also available.

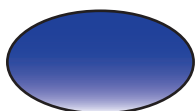


## NEW COLOR! BPI® DRIVER TINT™

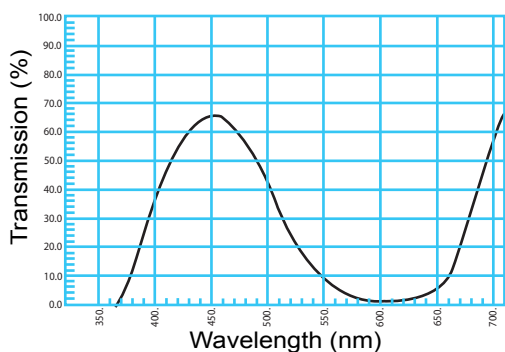


A golden brown with UV/blue light blocking. We recommend this color should be applied as a gradient going from brown/orange to yellow/orange.

# Help your patients with their Photosensitive Epilepsy



**BPI® Deep Blue Zee™ spectrum curve & color are copyrighted in US & foreign countries.**



## BPI Deep Blue Zee™

There are approximately 2.5 million people with photosensitive epilepsy. In a recent paper\*, G. Capovilla, et al, observed that "... photosensitivity can represent a serious problem in epilepsy patients, also because pharmacological treatment is often ineffective.

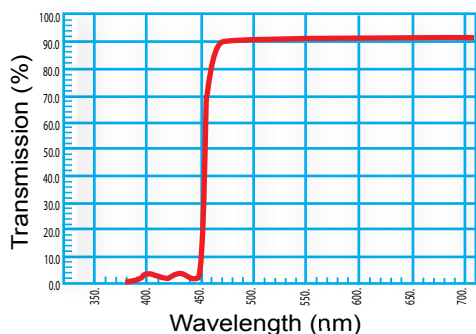
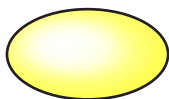
Non-pharmacological treatment using blue sunglasses is effective and safe in controlling photosensitivity...Six hundred and ten epilepsy patients were tested ...". When they were tested with the blue sunglasses, "... lenses made PPR disappear in 463 (75.9%) patients, and PPR was considerably reduced in an additional 109 (17.9%) of them." The BPI Deep Blue Zee tint's spectral curve when applied to CR-39 ophthalmic lenses is virtually identical to that of the lens used in that study. To properly apply the tint, the lens should be tinted until its luminous visible transmittance (Tv) reading is 14% (or a VIS reading of 16% on a BPI Dual Cal photometer). This usually takes about 30 minutes at 205 F.

\*"Suppressive Efficacy by a Commercially Available Blue Lens on PPR in 610 Photosensitive Epilepsy Patients" (Epilepsia, 47 (3): 529-533, 2006)

BPI PC: 37886

# Prevent cataracts, macular degeneration and retinal damage

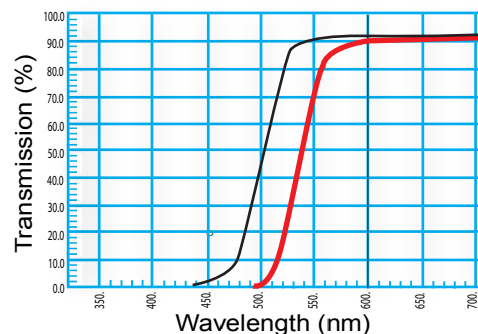
## BPI® UV - Blue Barrier™ 440 Protective Series



Sunlight contains UV and blue light. UV light is part of the non-visible light spectrum that we are exposed to every day. It can cause damage to our eyes, particularly the surface and deeper layers of the cornea and the crystalline lens of the eye by cataract formation as well as the increased potential for dry eyes, dystrophies, pinguecula and pterygium of the cornea. Blue light, which is part of the visible light spectrum, may also be a cause for concern. It reaches deeper into the eye than the UV and its cumulative energy effect can cause irreparable damage to the retina. Blue light is one of the main causes of damage to our eyes as we age and is an important factor that can cause the worrisome loss of sight-enabling pigmentation in the back of the eye.

BPI PC: 37888

## BPI® Diamond Dye™ 460/510 Protective Series



This tint blocks violet/blue in this spectral range very well, and should be helpful in protecting the eye from these light colors, which have been implicated with macular degeneration. This tint does not inhibit seeing the traffic signal colors - they pass the European traffic signal recognition requirements, so it can be used while driving.

Since the blue sky is darkened to a gray green when viewed through these tints, sport shooting enthusiasts will find these tints an aid in spotting skeet targets against the sky.

BPI PC: 37887



# Cut-Off tint helps patients with color blindness

## BPI® 550/570nm Cut-Off tint

### Newest protection and vision enhancement for color blind patients

BPI introduces another cut off tint, joining the ranks of BPI UV-Blue Barrier 440, BPI Winter Sun 450, BPI Diamond Dye 500/550, and BPI Deep Red Monochrome 600.

This red-orange to red tint is beneficial when the short wavelength end of the spectrum (violet, blue green) needs to be blocked. These uses include blue blocking for greater out-of-doors contrast against the blue sky and blocking of blue/violet for ARMD purposes. It may also provide a higher transmittance lens option for red-green color blind patients.

For those seeking a true 550nm cut-off, this tint will reach that point much more quickly than the 500/550 tint.

BPI PC: 37889

