

## NEOCHROMES/ PROTECTION FROM HARMFUL UV & BLUE LIGHT →

### UV LIGHT BLOCKING →

UV light is generally defined as invisible, with wavelengths between 100-380 nanometers (nm). UV light has much higher energy levels than visible light. Exposure to UV light can cause changes in the skin, leading to suntan, sunburn, wrinkles, and potentially skin cancer.

The cornea and lens of the adult human eye are quite efficient at blocking UV radiation and keeping it from reaching the retina. However, UV light damages the skin and front structures of the eye.

Prolonged exposure to UV light is linked to pterygium, photokeratitis (snow blindness), cataracts, and other eye disorders. **Neochromes lenses block 100% of UVA and UVB rays up to 400 nm.**

**Neochromes lenses** help wearers care for their eyes by **blocking 100% of damaging UVA and UVB rays.**

They **also filter blue light**, especially when activated outdoors.

### BLUE LIGHT FILTERING →

Blue light is the portion of the visible light spectrum with the highest energy, usually considered to be wavelengths in the range of 400-500 nm. Sunlight is, by far, the largest source of blue light in our environment. The screens of our computers, phones, and other digital devices are also sources of blue light.

Neochromes lenses offer maximum protection against these potentially harmful wavelengths of light.

**Neochromes lenses in gray block an average of 80% of high energy light (400-420 nm) when clear, and at least 91% of high-energy light when dark. In addition, they block an average of 89% of light between 425-450 nm when dark.**

## BENEFITS/



**Greater comfort** than standard clear lenses in changing light conditions.



**Daily protection** against harmful UV light, by blocking 100% of **UVA and UVB rays.**



Blue light filter to **guard against eye fatigue**, both indoors and outdoors.



**Fast adaptation** to changes of light in any environment.

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[www.mialab.com](http://www.mialab.com)



**NEOCHROMES®**  
Embrace the light



# WHAT IS/NEOCHROMES?

Neochromes is a line of state-of-the-art photochromic lenses offering wearers optimal vision and maximum comfort in any light, without needing to change glasses.

Neochromes lenses adapt instantly to changes of light, darkening in seconds and returning to clear again in record time.

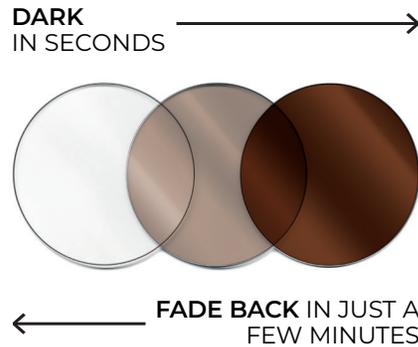
They provide optimal eye protection against harmful UV and UVB rays, as well as reducing eye fatigue for maximum comfort.

## ADVANCED TECHNOLOGY IN PHOTOCHROMIC LENSES. TAKE THE LEAP TO NEOCHROMES



## HOW DO/THEY WORK?

- **What do they look like indoors?**  
Crystal clear.
- **How quickly do they darken?**  
In just seconds.
- **How long do they take to fade back indoors?**  
At standard room temperature, they fade back in just a few minutes.

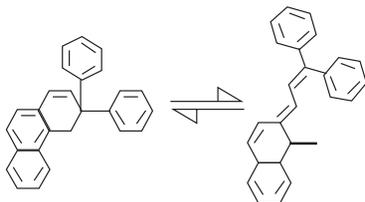


## THE KEY/

Photochromic molecules have, under normal conditions, a folded shape that makes them transparent. When absorbing ultraviolet light, their shape changes, the molecular structure opens and absorbs visible light. **The two forms of the photochromic molecule - open and closed - exist in balance with a bond that's continuously broken and rebuilt.**

**The photochromic molecule constantly switches between its transparent and dark states.** If the lens is exposed to significant levels of UV light, most of the molecules will be in the open state, darkening the lenses. In the absence of UV light, the molecules will remain closed, resulting in clear lenses.

Photochromic dye molecules change from a closed **(transparent)** shape...



... to an open, light-absorbing **(dark)** shape when exposed to UV light.

## NEOCHROMES/ CONSISTENCY OF ⇔ PERFORMANCE

### MATERIALS/

In photochromic lenses, it's common to find inconsistent functionalities that vary depending on the refractive index. This is because the manufacturing processes change depending on the material. It might happen that different photochromic substances are used for lenses of different base materials.

**Neochromes has taken great care to ensure homogeneous, virtually identical functionality across all materials.** The visual experience with Neochromes is consistent for any wearer, even if they choose to purchase polycarbonate lenses for their sports eyewear and lenses with a 1.67 index for every day.

### TEMPERATURE/

**Any photochromic lens is affected by temperature.**

**In cold temperatures,** photochromic lenses darken more and take longer to fade back.

**In warmer temperatures,** the lenses don't darken as much and fade back more quickly. This is a characteristic of the state of balance in a photochromic system. Photochromic molecules use thermal energy to return to the clear state.



**COLD CLIMATE**  
+ Darker  
- Clearing time

**WARM CLIMATE**  
- Darker  
+ Clearing time

