

Lens with UV+420cut™ technology

Typical UV-cut lens

\* The photo is provided for illustrative purposes. Note that the actual product does not completely block all UV light up to 420 nm.

# UV is not the whole story.

Take better care of your eyes with UV+420cut™ technology.



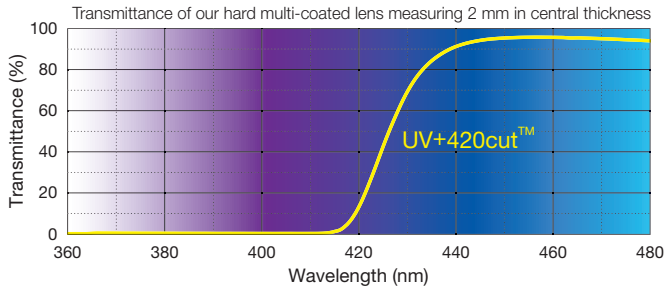
UV+420cut™  
lens technology

\* In this leaflet, the phrase "caring for your eyes" means protecting your eyes from UV and a part of the high energy visible light.

# New technology blocks UV and a portion of the high-energy visible (HEV) light.

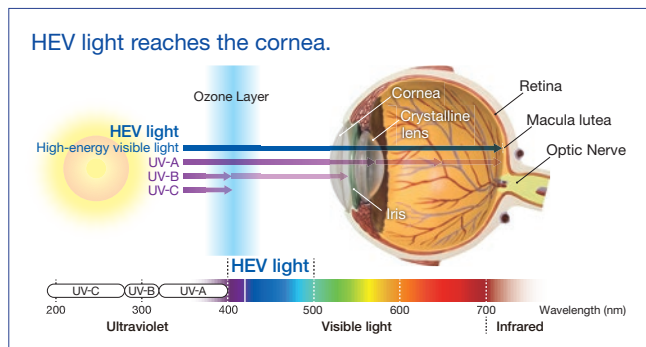
## Technology

- A clear lens is achieved through new technology that blocks high-energy visible (HEV) light at 400-420 nm, in addition to UV-A and UV-B.



## What is HEV light?

- HEV light is high-frequency, high-energy light in the violet/blue band from 400 to 500 nm in the visible spectrum.



The latest research shows that blocking UV and HEV light is critical to protecting eyes from cataracts and age-related macular degeneration (an eye disorder caused by age-associated decline in the function of the macula in the center of the retina).

## Importance of blocking HEV light

Importance of blocking shorter wavelength light up to 420 nm for long-term eye health

The shorter wavelength light of **400-420 nm** is **more harmful for younger individuals under 20 years old**, who play and enjoy outside under sunlight, because their eye lenses are very transparent. The group of Prof. Funk showed in standardized laboratory experiments by cell culture that **neuronal retinal cells react after exposure to short wavelength light of 411nm with much higher stress and signs of beginning cell death (apoptosis)** than after impingement of 470nm light.\*<sup>1</sup> Thus, it is very useful to block HEV light of 400-420 nm, because the light can trigger harmful processes for the eye.



**Dr. Richard H. W. Funk**

Medical Faculty Carl Gustav Carus, Technical University of Dresden

\*1: Knels, L., Valtink, M., Roehiecke, C., Lupp, A., Vega, J. d. I., Mehner, M., & Funk, R. H. W. (2011) Blue light stress in retinal neuronal (R28) cells is dependent on wavelength range and irradiance. European Journal of Neuroscience, 34, 548-558

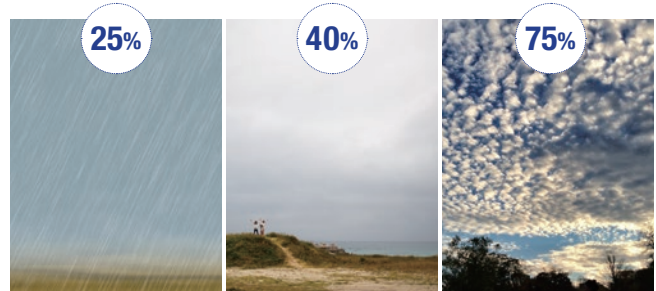
- UV and HEV light cut rate

	Wavelength	Percentage	
		2 mm nonprescription	1.2 mm nonprescription
Cut rate	380-500 nm	42.2	<b>39.1</b>
	400 nm	99.9	<b>99.9</b>
	410 nm	99.9	<b>99.7</b>
	420 nm	86.1	<b>70.5</b>
	430 nm	30.1	<b>20.2</b>
ISO12312-1	380-500 nm	24.3	—

Measured with our 1.60 MR-95™ lens

## Clear lens for everyday use

- Beyond sunny days or clear skies, we're exposed to 40% to 75% of UV rays on cloudy days and 20% to 30% on rainy days. Clear lenses can be worn under all weather conditions and are recommended for maintaining long-term eye health.



Rainy day

Cloudy day

Sunny day

- The lenses won't affect the way you perceive natural colors. Eyewear with UV+420cut™ is suitable for all situations.



## Lenses with UV+420cut™ technology-Available material per index

Mitsui's UV+420cut™ technology is available only with the MR™ series and the RAV7™ Series.

Refractive index	1.50	1.60	1.67	1.74
Lens Material	RAV7™BC *2	MR-6™ MR-8™ *2 MR-95™	MR-7™ *2 MR-10™	MR-174™

\*2: Those materials will be not available in some regions. Please contact us for details.

uv420cut.com



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