* 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.

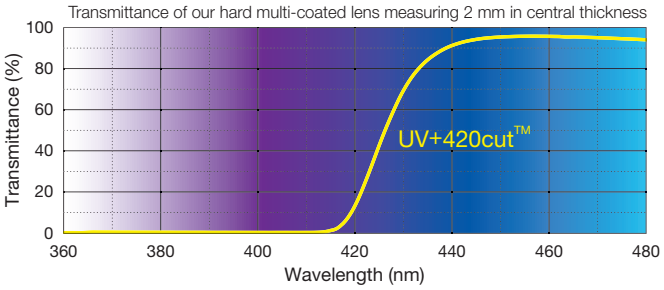
UV+420cut™
lens technology

* 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.



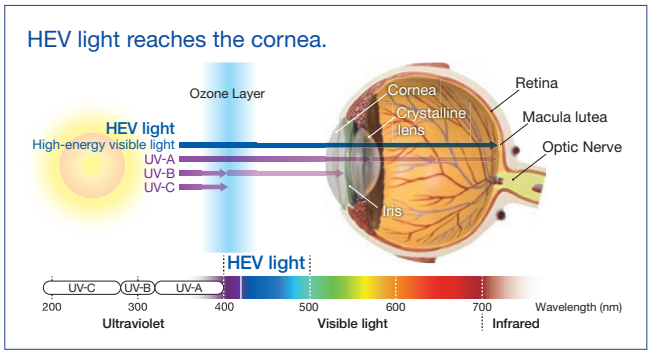
- UV and HEV light cut rate

	Wavelength	Percentage	
		2 mm nonprescription	1.2 mm nonprescription
Cut rate	380-500 nm	42.2	**39.1**
	400 nm	99.9	**99.9**
	410 nm	99.9	**99.7**
	420 nm	86.1	**70.5**
	430 nm	30.1	**20.2**
ISO12312-1	380-500 nm	24.3	–

Measured with our 1.60 MR-95™ lens

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

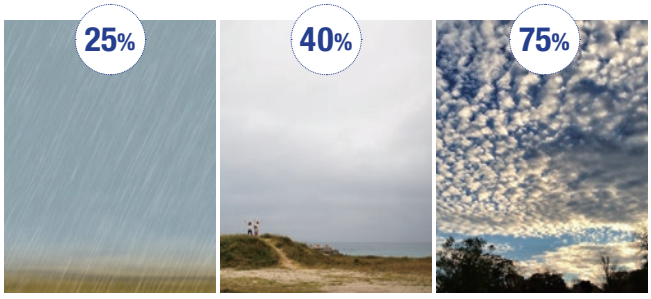
The shorter wavelength light of **400-420 nm** is **more harmful for younger individuals under 20 years old**, who play and enjoy outside under sunlight, because their eye lenses are very transparent.The group of Prof. Funk showed in standardized laboratory experiments by cell culture that **neuronal 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.*1 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., Roehlecke, C., Lupp, A., Vega, J. d. l., 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

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.

https://jp.mitsuichemicals.com/en/special/uv420cut/

Mitsui Chemicals

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