

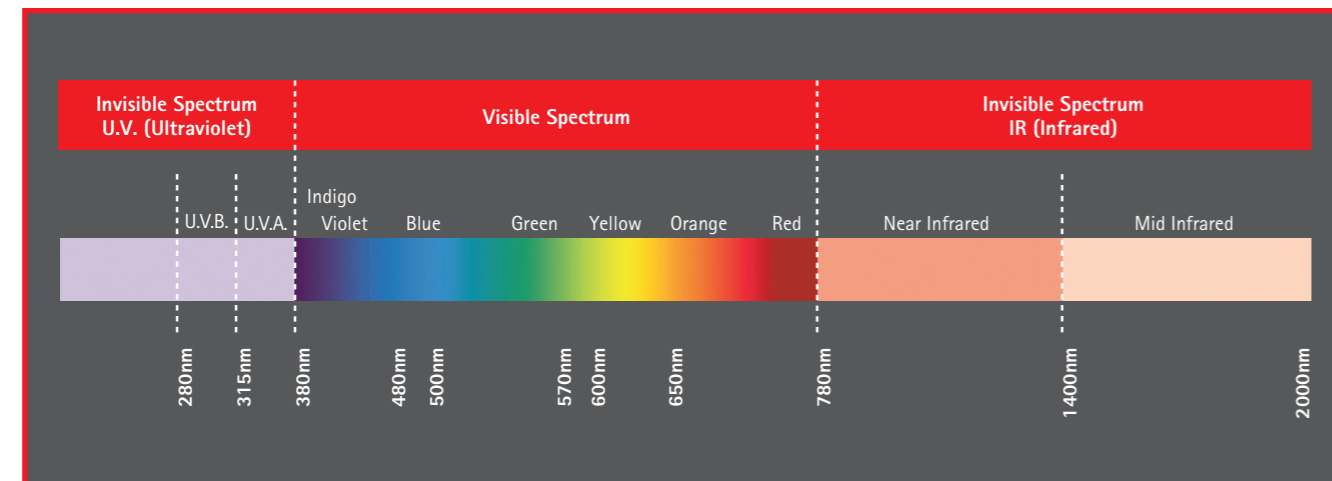
GUIDE TO OPTICAL RADIATION AND LENS SHADES

Harmful optical radiation can damage the eye in different ways depending on its wavelength and properties. Certain infrared, ultraviolet, and blue light can cause partial or total blindness. In some cases effects can be immediate, and in others damage is sustained over time leading to eye problems or blindness later in life. The chart below shows different forms of light, their wavelengths and properties, as well

as the types of harm that can be sustained as a result of exposure. Eye and face protection should be selected with an appropriate shade to protect against the specific form of harmful light identified through risk assessment and legal guidance. The JSP lens shades guide on page 12 provides more information on the lenses available and their properties.



CONSEQUENCES OF OPTICAL RADIATION



Optical Radiation Type	Optical Radiation Level	Organs Affected	Consequences on Sight
Ultraviolet (UV)	100 to 280 nm	Cornea	Conjunctivitis - partial blindness
Ultraviolet (UV)	280 to 315 nm	Cornea Et Lens	Cataract - conjunctivitis - partial blindness
Ultraviolet (UV)	315 to 380 nm	Cornea Et Lens	Cataract - conjunctivitis - partial blindness
Blue Light	380 to 500 nm	Retina	Partial or total blindness
Visible Light	380 to 780 nm	Retina	Visual complaints - inconsistent perception
Near Infrared (IR)	780 to 1400 nm	Lens Et Retina	Retinitis pigmentosa - cataract - blindness
Mid Infrared (IR)	1400 to 2000 nm	Lens	Cataract - partial blindness

GUIDE TO JSP LENS SHADES

Selection of a lens shade must take into account the optical radiation hazard(s), and subsequent filtering requirements. It is also important to consider the need for good visibility and colour recognition. Some lenses have limitations due to the low light transmission value required to provide effective filtering. This means some lens shades are not safe for use

where colour recognition is imperative, such as for driving or electrical work. The table below provides information on lens shades offered by JSP, showing levels of UV and IR light absorption, the light transmission value for each shade, and guidance on use.

Marking	UV Absorption 280-380 nm	IR Absorption 780-1400 nm	Light Transmission Value (LTV)	Lens Shade	Functions and Suitable Uses
2-1.2 2C-1.2	✓ (99.99%)	✓ (11%)	74.4% - 100% 74.4% - 100%	Clear	Suitable for use in good visibility conditions.
5-1.4 5-1.7	✓ (99.99%)	✓ (34%)	58.1% - 74.4% 48% - 56%	Indoor / Outdoor	Reduces dazzling and harmful effects of blue light. Ideal when moving between light and dark areas.
5-2.5	✓ (99.99%)	✓ (23%)	17.8% - 29.1%	Mid Smoke	Crisp optics and glare protection whilst providing true colour recognition.
5-3.1	✓ (99.99%)	✓ (23%)	8.5% - 17.8%	Smoke	For direct sunlight and bright glare conditions.
5-2.5	✓ (99.99%)	✓ (40%)	17.8% - 29.1%	Blue Mirror	Ideal protection against sun glare as it reflects solar rays before filtering UV.
5-3.1	✓ (99.99%)	✓ (23%)	8.5% - 17.8%	Polarised	Stops horizontal reflections, eliminating glare. Ideal for driving Et working around water Et flat reflective surfaces.
2-1.2	✓ (99.99%)	✓ (12%)	74.4% - 100%	Yellow	Offers sharpness, acuity and contrast. Primary function is to block blue light.