

WAVEFRONT AND SAM[®] TECHNOLOGIES

What is Spherical Aberration?

When light rays pass through the edge of any optical system, they are focussed differently from those passing through the centre, resulting in blur. This effect is called Spherical Aberration. All optical systems suffer from this effect, including the eye.

What is

Spherical Aberration Management[®] is a patented technology applied to a contact lens design. SAM[®] reduces the spherical aberration induced blur significantly, resulting in a visual image that is clearer than that achieved with the naked eye.

What is UltraVision's Wavefront Technology?

Each individual eye has its own "unique" aberrations. These aberrations result from a number of factors including corneal shape. Wavefront technology enables the analysis of these ocular aberrations as well as evaluating those that result in the eye-contact lens system.

UltraVision has incorporated the results of the studies of over one thousand eyes to arrive at a design that offers the best wavefront controlled vision to the widest range of the population.

UltraVision's Wavefront designed optics are available in lathe-cut 74 % water content Silicone Hydrogel material, Definitive[™] by Contamac.

This unique combination represents a huge step forward in design and material technology.



What are the benefits of Wavefront optics?

- Improved vision and sharpness
 - Improved night vision
 - Masking of low levels of astigmatism
 - Reduced blurring caused by any rotation of toric lenses
 - Increased depth of focus. Early presbyopes can gain up to +1.00 DS of near add effect
 - Better monovision as the depth of focus effect reduces the difference between the dominant distance eye and the "reading" eye, thus making the system more tolerable
 - Reduces near visual stress in young myopes and computer users
 - Improves glare effects in those wearers with large pupils
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What makes UltraVision lenses different to others on the market?

The patented SAM[®] and Wavefront optics, combined with a full range of powers and parameters, are available in many materials, including lathe-cut Definitive[™] Silicone Hydrogel material. The Queen's Awards for Enterprise - Innovation was awarded to UltraVision for these innovative and state-of-the-art technologies.

Presbyopia Options

Early presbyopia

UltraVision's Wavefront technology gives up to +1.00 DS effective addition. Those patients who need a reading aid, only when tired or in working low light conditions, will benefit from single vision distance lenses, without the need to wear multifocal lenses. It may be possible to reduce the distance prescription slightly as well, without losing clarity, especially in the non dominant eye.

Intermediate vision

Due to the effective +1.00DS addition offered by the Wavefront optics, those patients who need an intermediate correction e.g. working on computers, reading music etc, will benefit from distance single vision lenses and may not need to have a multifocal design.

Monovision

Traditional monovision (one eye corrected for distance, the other eye corrected for near) can often leave the patient with very little depth perception due to blurring in the non dominant eye. By wearing a contact lens with Wavefront optics, due to the depth of focus effect, there is an overlap in functional vision between the two eyes, thus restoring binocular vision. Using Wavefront optics makes monovision a much more comfortable option.

Modified monovision

For older patients, it can be useful to prescribe a single vision contact lens in the dominant eye and a multifocal in the non dominant. The increased depth of focus designed into the optics makes this a more comfortable option than using standard contact lenses.

Multifocals

Multifocal contact lenses with Wavefront optics are very successful for many patients. They provide the ultimate answer to many presbyopic dispensing problems in that the patient has all round comfortable vision for distance and near. Definitive™ Silicone Hydrogel material is ideal for the Presbyopic eye which is typically drier.

Visual Stress

Young Myopes

Children and young adults are often involved in a lot of close work e.g. school work, computers, games etc. Prolonged close work often stresses the visual system. When wearing contact lenses with Wavefront optics, the depth of focus effect at near is equivalent to the wearer using reading glasses of up to +1.00DS. This can reduce headaches and other symptoms of visual stress.

Hypermetropes

It is often difficult to give young hypermetropes the plus they need at near without blurring their distance vision. The enhanced optics in the Wavefront design allows one to give a fuller plus power required to aid near vision without compromising the distance vision.

Computers

The +1.00DS add effect is very useful for those who work on computers all day. The Wavefront optics reduce visual stress. When using contact lenses made in the Definitive™ Silicone Hydrogel material, the water retentive properties allow longer, more comfortable wearing times without the “drying out” experience of many other lenses.

Sports Vision

Sharper vision

The use of Wavefront technology is now well accepted as being beneficial to sportsmen and sportswomen. The enhanced visual sharpness and contrast provide support for greater sporting performance.

Wide range of prescriptions

UltraVision's Wavefront designed contact lenses are available in a complete range of powers, with spheres to +/-30.00DS, cyls up to 11.00DC and multifocal options.

Definitive™ Silicone Hydrogel 74% water material ensures extremely comfortable long wearing times essential to sports people in challenging conditions.

FOR FURTHER DETAILS
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