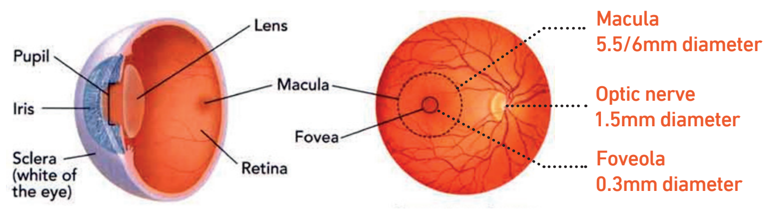
iolAMD® Magnify life™

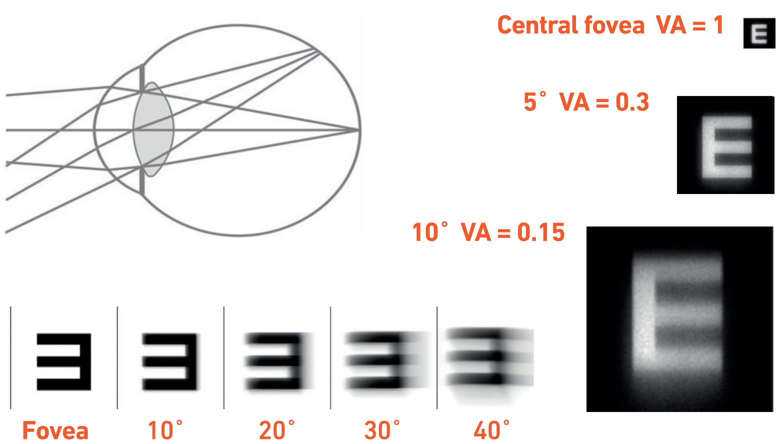
eyemax mono™ Extended macular lens

Eye anatomy and physiology



Front view of retina

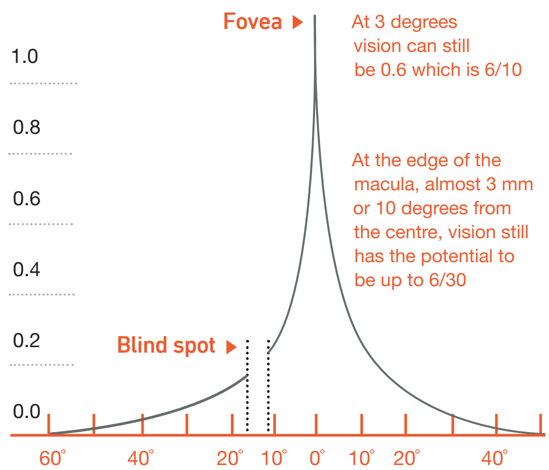
In every eye retinal images in the periphery are blurred



Vision capability varies depending on distance of image from the fovea and cone density

One degree is approx 300 microns,
Ten degrees is approx 3 mm
(macula being 5.5 to 6mm in diameter)

Therefore at zero degrees the vision is 1.0 = 6/6
Ten degrees approx 0.2 = 6/30
(Some studies say 0.15 = 6/40)



Vision capability also correlates with cone density which falls dramatically from 200k/mm^2 near the foveola to100k/mm2 at the edge of the fovea down to 10k/mm^2 at ten degrees

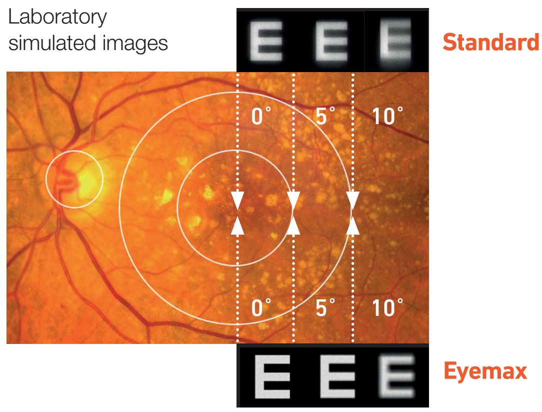
eyemax mono technology

Wavefront optimised optics at foveal fixation results in vision similar or better than standard monofocal lens.

Unique hyperaspheric optics provide superior image in all areas up to 10 degrees from foveal centre resulting in maximum vision possible compared with standard monofocal.

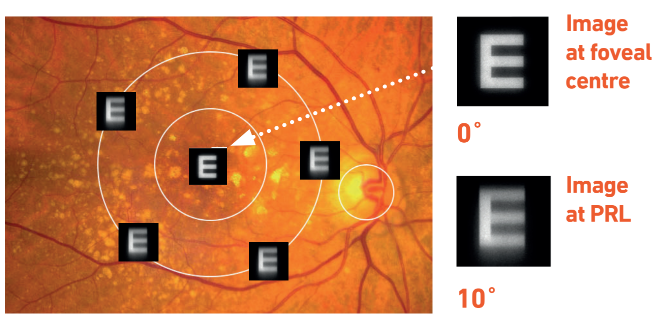
This is the main mode of action resulting in improved vision in AMD patients using single or multiple preferred retinal loci (PRLs).

Laboratory simulated images



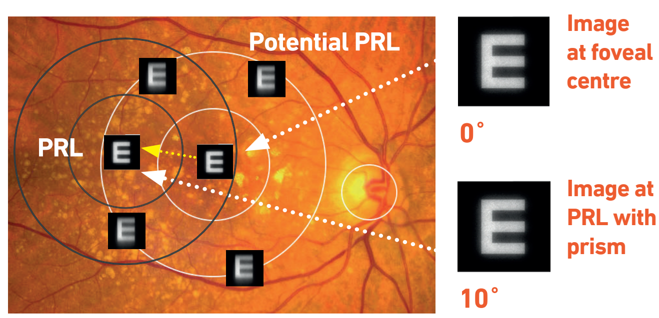
Standard monofocal images on the macula

dry AMD – sub-optimal image at PRL



A prism

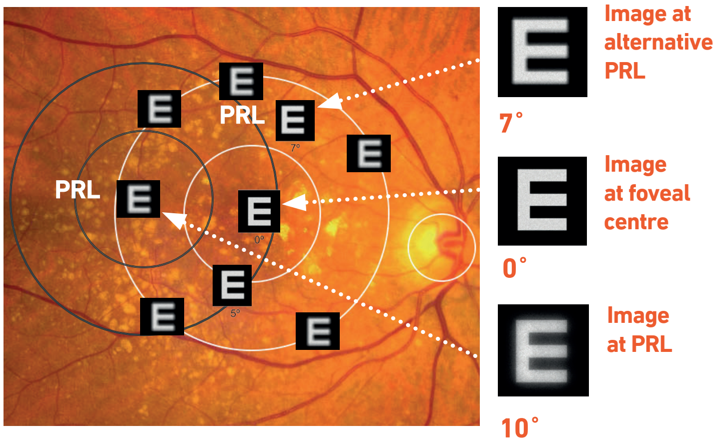
deviates an image to a single PRL only



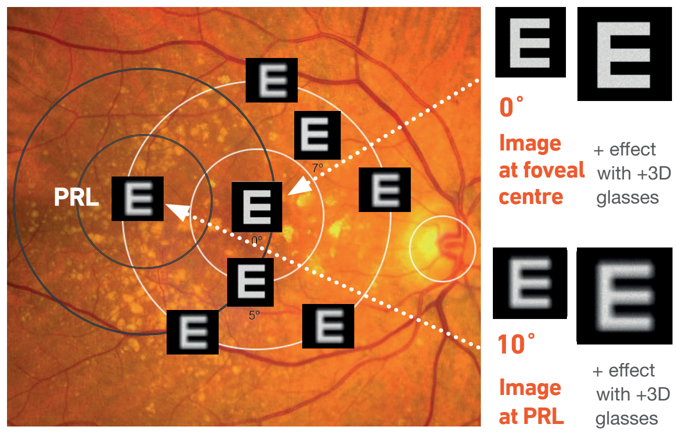
eyemax mono images on the macula

- Improves the image at all PRLs and is optically almost as good in all areas of macula as at the fovea
- Improves the image at the PRL to be optically almost as good as at the fovea but also
- Can be optimised in combination with external glasses to provide 10-20% magnification if the patient is left hypermetropic +3 if required (image 15% bigger)

With emmetropic target

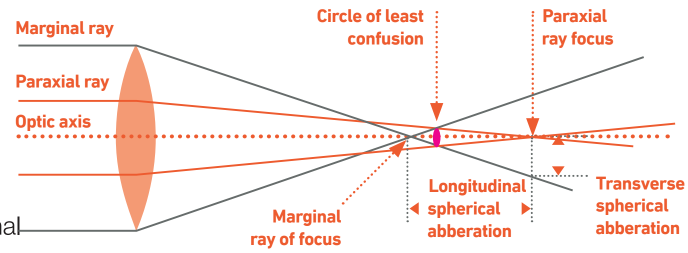


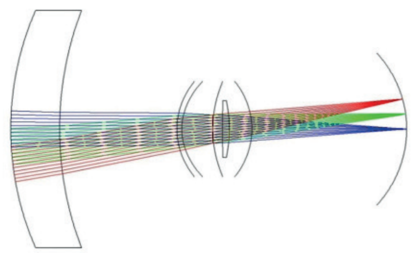
With hypermetropic target and glasses

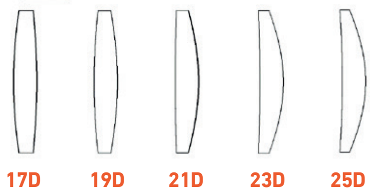


How does eyemax mono achieve this?

- It is well established that longitudinal asphericity can be used to change depth of focus
- Transverse asphericity also exists optically and can be used to change breadth of focus
- eyemax mono uses for the first time in an IOL both longitudinal and transverse asphericity producing this unique optical surface
- Incoming wavefront of the wide angle design can be modified by changing the lens surfaces to manipulate transverse asphericity to improve peripheral retinal image quality - reduce peripheral macular blur (similar to deformable mirrors used to alter the Hubble telescope and change asphericity)
- No compromise in MTF (Modulation Transfer Function) centrally. More than a single surface can be modified to further optimise the image eg. control coma
- Distance magnification of up to 10% can be achieved if desired for patients with worse vision than 6/15 by leaving them +2 or +3 and up to 20% for near with additional reading glasses





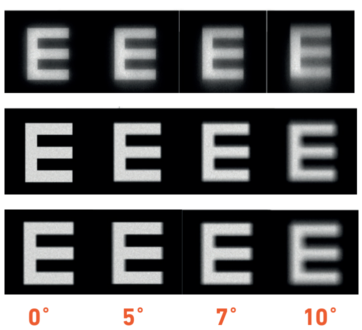


eyemax mono with correcting glasses

Standard monofocal IOL (reference)

eyemax mono plus correcting spectacle lens (+3 D) object far magnification 10%

eyemax mono plus correcting spectacle lens (+6 D) object near magnification reading 20%



eyemax mono magnification

The effect of eyemax mono

- The optic of the eyemax mono delivers in a way that is similar to a prism but is not a prism
- Prisms work on fixed PRLs whereas the eyemax mono IOL will continue to work as the patient shifts their PRL to maintain optimised vision from the remaining macula as though you had deviated the image there
- Image is optimised in all areas of the macula up to 10 degrees from fixation – permitting maximum use of multiple PRLs and reading vision (which requires use of more than one macular area)

For further information please visit www.iolamd.com or email info@iolamd.com