

# Case Report:

## Bitoric Zenlens

### Brian Tompkins

Brian Tompkins (TK&S, Northampton, UK) is highly respected throughout the contact lens industry and is an expert on imaging and fitting. His innovative lectures are motivating practitioners all over the world to step up their game.

Bausch + Lomb recently introduced new versions of the Zenlens scleral lens. Which allows the practitioner to design and adjust the lens like it is a fully customized lens. We are fortunate to work with Brian Tompkins who is the first practitioner to use this Lens.



### Introduction

The subject is a 25 year old male, diagnosed with nystagmus, binoculair amblyopia and a high astigmatism following the rule. Due to the nystagmus it can get quite complicated to get a good quality image.

His latest Refractive errors measure OD S-2.50 C-5.50 x 180 VA 6/30 ; OS S-1.00 C-5.50 x 180 VA 6/30.

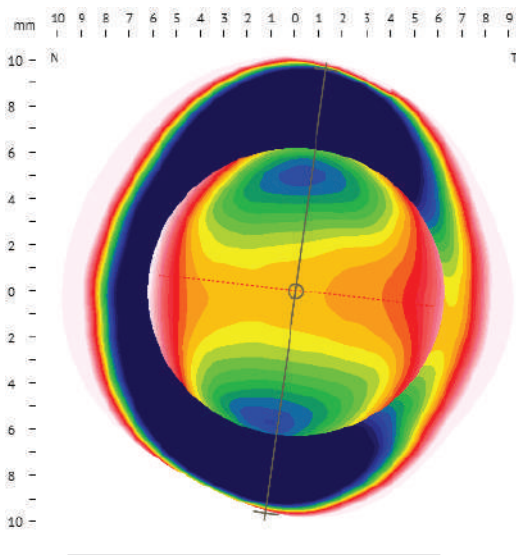


Figure 1

The elevation map is gathered through taking a measurement with the Eye Surface Profiler (ESP, Eaglet Eye, Houten, The Netherlands). Figure 1 indicates a difference in height that causes the astigmatism, the red parts of the map are more elevated whereas the blue sections are flattened. The astigmatism extends from the cornea on to the sclera. Scleral astigmatism with the rule is common, customised lens designs may be necessary to solve this problem. With-the-rule astigmatism is induced by a lifted vertical meridian and flattened horizontal meridian which can cause vessel impingement or blanching around 3 and 9 o'clock causing discomfort.

### Profilometry explained

ESP uses Profilometry and it is a method in which 2 projectors flash 2 light patterns on the ocular surface, each from a different angle (Figure 2). With the use of fluorescein it is possible to make the scleral surface a reflecting surface. The data information then is transformed into sagittal height data using Fourier domain profilometry transformation. It is now possible to measure up to 20 mm horizontally and vertically.

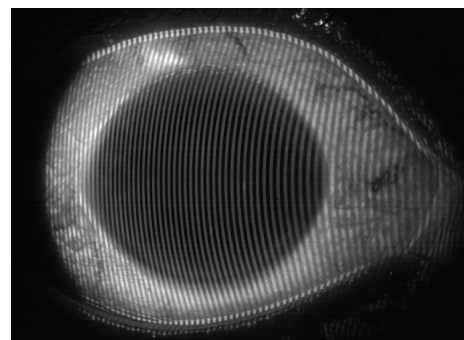


Figure 2

## Profilometry data

Profilometry revealed that the corneal astigmatism continues into the sclera of the eye. Resulting in large differences between the 2 major meridians. When viewing Figure 3 you can find differences between the 13 and 16mm chord lengths (340 microns). This variance is visible on the Eye Surface Profiler (ESP) elevation map as well. Using the ESP we can quantify the amount of asymmetry and allow the practitioner to choose a matching scleral lens.

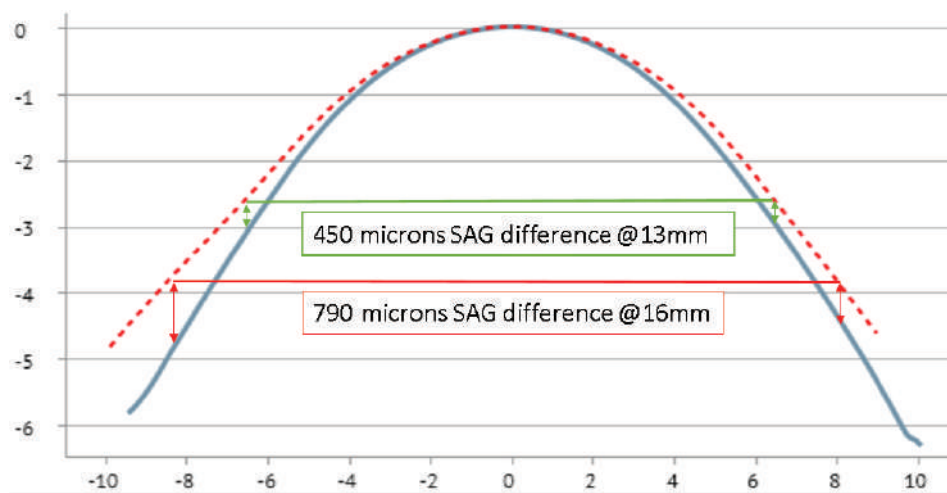


Figure 3

## Scleral Lens

The standard Zenlens currently offers a lot of customized options in the landing zone of the lens (called APS). The new additions allow to customize the limbal zone to a high degree of toricity. Being able to add toricity to the landing and limbal zone we can predict that the lens will align better and improving patient comfort.

## Conclusion

### Lens Order and Fitting

The scleral lens ordered was a 16 mm bitoric Zenlens design: 4100/4550, 9.13, S+1.00, Flat3/Steep5. The adjustment made using the elevation map obtained with the ESP resulted in a much better alignment and centration of the scleral lens, increasing the comfort.



Figure 4