OPTIMISATION

Digital Ray-Path Technology provides the best optical quality in each part of the lens—these lenses consider the interaction between the lens and the eye, taking into account lens position & eye movement. This simple technique drastically impacts the optical quality of lenses. In case of a conventional lens—including freeform lenses with conventional designs—dynamics of the eye and lens position remain static, resulting in the same design for all patients, which renders the final wearer experience less than optimum; this decreased optical quality manifests in a smaller near vision zone and compromised vision in the peripherals of the distance vision zone. Digital Ray-Path calculation guarantees a first class power optimisation that considers the complete eye-lens system to provide wearers with an accurate power in any gaze-direction. Oblique astigmatism is totally compensated for—no matter the power or type of frame.

The picture on the left illustrates astigmatic lobes experienced by the wearer of a lens designed with Digital Ray-Path, while the one on the right illustrates the same lens power in conventional format. Optimised lenses are made possible with Digital Ray-Path Technology, resulting in lenses with:

- larger optimal vision zones &
- less unwanted astigmatism.

Lenses not manufactured with Digital Ray-Path Technology—i.e. conventional designs and not optimised, are referred to as surface power lenses. Measuring lens power with a vertometer—conventional lenses have been developed to yield the correct power when measured like this. This type of calculation is known as nominal power calculation. It assumes that the same design is good for every prescription, i.e. a static design. But, the eye’s optical system is very different from the optical system used to measure lens power. The eye rotates around its centre, and the light follows an oblique trajectory that affects the power experienced by the wearer.

The difference in power than that actually prescribed can be more than 0.50D for lateral gaze of 30°—known as oblique aberration, the main optical aberration that cannot be resolved by conventional surfacing techniques.

The last diagram illustrates the effect of a lens with the same prescription optimised with Digital Ray-Path Technology and surfaced with freeform/digital surfacing equipment.

The power experienced by the wearer is stable throughout the lens, providing perfect vision for every direction of gaze.

A PRINTOUT OF MANUFACTURED LENS POWERS FOR VERIFICATION IS PROVIDED WITH FUTURO OPTIMISED LENSES

(ISO 21987 [1999])

FUTURO DIGITAL LENSES ARE DESIGNED WITH FREE-FORM DESIGNER™
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