# Introducing...



advanced digital lens technology

## **Digital Ray-Path**

The Legacy DRP has been engineered to reach the best balance between the eye's various fields of vision. By utilizing Digital Ray-Path science, the Legacy DRP can offer clear and high precision distance vision, as well as an excellent near zone. This provides wearers with a perfect combination of quality and comfort. The technology used is based on an accurate simulation of the eye-lens model, correcting for prism, pantoscopic tilt, and wrapping angle. It can be used with any frame shape and is located at any distance from the eye. Digital Ray-Path will manage back and front surfaces, not just spherical, torical or standard aspherical or atorical surfaces. For every frame and lens design, the entire visual field is simulated. Image quality is computed by means of an imaging model, taking into account eye tracking and lens characteristics. In summary, this unique calculation method adapts lens characteristics to compensate for all the variables which effect final vision quality. Due to this accurate calculation, the final lens provides the optimum power for the wearer throughout the total lens surface, not just the optical center. This design represents the highest optical quality and advanced technology in the market. The lenses produced with this technology are top quality products, with complete personalization.

The Legacy DRP offers a perfect balance between different visual regions, high resolution, crisp vision, and larger visual fields. The lens is perfect for PAL wearers looking for a high-quality custom designed lens supported by the years of experience found at IcareLabs. *Patients who use Shamir Autograph II®*, AO Compact, AO Easy, SOLAOne® HD, Sola HDV, Zeiss Individual® are a great match for Legacy DRP Lenses.

1.75

1.50

1.25

1.00

0.75

0.50

0.25

### Surface Power





#### Performance at each distance:

Far	
Intermediate	$\bullet \bullet \bullet \bullet$
Near	$\bullet \bullet \bullet \bullet$

### Benefits

- Full Field Optimization
- High Performance for high prescription
- High Performance for sport frames
- Oblique Aberrations Optimization
- Variable Object Space
- Completely customized lens
- Variable Inset: automatic and manual
- Freedom in base curve selection
- True material flexibility
- Frame shape optimization available

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## **Experience the DRP Differen**



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Focimeter measuring a lens The drawing on the left shows a typical setup for measuring lens power with a lensometer. Notice that the lens surface is placed perpendicular to the ray beam of the instrument. Conventional lenses have been developed to yield the correct power when being measured like this. This type of calculation method is known as nominal power calculation. It assumes that the same design is good for every prescription, what we could call a "static" design.



User power vs. lens meter raypaths But, the eye's optical system is very different from the optical system used to measure a lens, as you can see on the left. The eye rotates around its center, and the light follows an oblique trajectory that affects the power experienced by the wearer



Oblique errors in a conventional lens The drawing on the left illustrates the effect described above. This example shows the power experienced by the wearer of a conventional Single Vision lens when looking through various areas of the lens. The difference between power experienced and that actually prescribed can be more than 0.5D for a lateral gaze angle of 30°. This effect is known as oblique aberration, and is the main optical aberration that cannot be resolved by conventional surfacing techniques.

[2:00 + 1:00 Axis 90] [2:02 + 1:01 Axis 90]

Digital Ray Path performance This last drawing shows the effect of a lens with the same prescription, calculated with Digital Ray-Path, ground with Free-form equipment. The Power experienced by the wearer is stable on the whole lens, providing perfect vision for every direction of sight.

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