Introducing a lens that can take your scleral fitting to a higher plane.

Alden Optical’s® newest specialty lens has arrived: Zenlens™, a mini-scleral, fully vaulting lens co-designed with Jason Jedlicka, OD. Zenlens allows you to fit a wide variety of corneal shapes and sizes using a single fitting set and fitting philosophy. It offers you:

• Lens diameters of 16.0 mm and 17.0 mm—appropriate for a wide range of corneal sizes
  • Prolate and oblate designs to fit a wide range of corneal shapes
  • Smart Curve™: modify only the parameter you want, not the ones you don’t
    • Custom design options to fine-tune optics and physical fit
    • A comprehensive 24-lens diagnostic set for efficient fitting
**Diagnostic Set Configuration**

**Standard Parameters**

- **Sagittal Depth Range:** 3.500 to 6.700 in 50 micron steps (fully customizable)
- **Diameter:** 16.0 mm and 17.0 mm
- **Powers:** +20.00 D. to -20.00 D.
- **Edge Profiles:** Steep-3, Steep-2, Steep-1, Standard, Flat-1, Flat-2, Flat-3
- **Options:** Toric PCs, Flexure Controlling Profile, Custom Center Thickness, Front Toric Rx

**Recommended Material:** Boston XO® (XO2® on request)

**Lens Design Selection**

Select lens diameter based on corneal diameter measurement or estimation:
- For smaller corneas (11.7 mm or smaller), the 16.0 mm design is recommended
- For larger corneas (11.8 mm or larger), the 17.0 mm design is recommended

Select the lens design based on corneal shape or indication:
- Choose the prolate design for keratoconus or normal corneas with ocular surface disease
- Choose the oblate design for post graft, post refractive surgery, or corneal marginal degenerations

**Initial Diagnostic Lens Selection—Prolate Design**

- For normal corneas or mild keratoconus, choose the 4.500 (16.0 mm) or 4.900 (17.0 mm) SAG
- For more advanced keratoconus, choose a deeper SAG (4.800 – 5.500)

**Initial Diagnostic Lens Selection—Oblate Design**

- For post refractive surgery corneas without ectasia, choose the 4.400 (16.0 mm) or 4.500 (17.0 mm) SAG
- For post refractive surgery corneas with ectasia or for typical corneal grafts, choose the 4.700 (16.0 mm) or 4.800 (17.0 mm) SAG
- For deep corneal grafts, choose the 5.000 (16.0 mm) or 5.100 (17.0 mm) SAG

*Apply the lens filled with saline solution and fluorescein to the eye with the patient's head turned directly toward the ground. If needed, a lens insertion tool may be utilized.*
**Power Determination**

Once the lens demonstrates acceptable central vault and limbal clearance, and the sclera has been assessed for adjustments to the peripheral curve system, an over-refraction should be done to determine final power and whether lens flexure exists.

**Flexure Control**

If a spherocylindrical over-refraction is found, over keratometry or topography may be helpful to ensure that flexure is the cause for the over-refraction. In this instance, an increase in lens thickness will help to reduce flexure (Flexure Control Factor).

If the lens demonstrates significant compression or lift in one meridian, a lens can be ordered with toric scleral alignment curves to aid in the fit. Please contact Alden Optical Consultation for assistance with these types of requests.

**Cylinder Control Options**

If cylinder is present in the over-refraction, use keratometry or topography to check lens for lens flexure.

<table>
<thead>
<tr>
<th>OBSERVATION</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lens is <strong>flexing</strong> and landing zone alignment is <strong>uniform</strong> in the primary meridians</td>
<td><strong>Request Flex Control Factor of 1</strong></td>
</tr>
<tr>
<td></td>
<td>Adds 100 microns of thickness</td>
</tr>
<tr>
<td>Lens is <strong>flexing</strong> and landing zone alignment is <strong>unequal</strong> in the primary meridians</td>
<td><strong>Request Toric APS</strong></td>
</tr>
<tr>
<td></td>
<td>Flatten or steepen APS by different amounts in each meridian</td>
</tr>
<tr>
<td>Lens is <strong>not flexing</strong> and landing zone alignment is <strong>uniform</strong> in the primary meridians</td>
<td><strong>Order Front Toric Rx Design</strong></td>
</tr>
<tr>
<td></td>
<td>Offers dual elliptical stabilization</td>
</tr>
<tr>
<td>Lens is <strong>not flexing</strong> and landing zone alignment is <strong>unequal</strong> in the primary meridians</td>
<td><strong>Order Toric APS</strong></td>
</tr>
<tr>
<td></td>
<td>Check axis orientation of the flat meridian (marked with dots). Perform new OR if cylinder is still present; order front toric design with toric PCs</td>
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Assessment of Lens Fit

There are 3 components to a successful scleral lens fit, and the Zenlens is no different:
1) Proper Central Vault
2) Limbal Clearance
3) Scleral Alignment

1) Central Vault

The Dx lens should exhibit roughly 300-400 microns of initial central clearance. If the clearance is inadequate or there is central touch, apply the next deeper lens from the diagnostic set. The diagnostic lenses are 350 microns thick, so this can be used as a guide. If needed, lenses can be ordered with custom SAG values.

Once central clearance is observed, use SLE cross section view to determine the amount of clearance, as shown below:

If you feel the ideal vault is between these two lenses, a lens with 4.750 SAG could be requested.
2) Limbal Clearance

The lens should also exhibit clearance beyond the limbus. If a lens does not demonstrate full limbal clearance, either move to a larger diameter or ask for an increased limbal clearance as a custom parameter when ordering.

3) Scleral Alignment

All diagnostic lenses come in a standard peripheral curve system. If the lens is too tight (causing blanching in a significant area of the lens), the lens can be ordered with a flat 1, flat 2, or flat 3 peripheral curve system. A lens with edges that are too flat can be ordered in steep 1, steep 2, or steep 3. Choosing the peripheral curve system is based upon just how tight or loose the curves are.

If the lens demonstrates significant compression or lift in one meridian, a lens can be ordered with toric scleral alignment curves to aid in the fit. Please contact Alden Optical Consultation for assistance with these types of requests.

**APS Peripheral curve system options:**

- Flat 3 • Flat 2 • Flat 1 • **Standard** • Steep 1 • Steep 2 • Steep 3
## Troubleshooting

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE SOLUTIONS</th>
</tr>
</thead>
</table>
| Bubbles under lens            | • Reinstruct on proper application  
• Check for edge lift in one or more quadrants; may require toric or steeper PC  
• Reduce vault, if possible                                                                 |
| Blanching/Redness             | • May need to flatten PC  
• If occurring in opposing meridians, consider toric PCs                                                                                       |
| Limbal bearing                | • Order with increased limbal clearance  
• Go to larger lens diameter                                                                                                                      |
| Debris/Clouding under lens     | • Typically occurs with flat edge in the superior quadrant; steepen PC or go to toric PC  
• Check for excessive corneal or limbal clearance                                                                                               |
| Poor wetting                   | • Try rubbing GP conditioner on lens for 30 seconds, then rinse off and apply saline  
• Address lid hygiene issues                                                                                                                     |
| Poor vision                    | • Ensure proper Rx and lens surface is clean  
• If cylinder is present in the over-refraction, refer to the Cylinder Control Options section on the inside of this card |