

# Specialty Soft and Hybrid Contact Lenses

B.W.Phillips, NCLEM, FCLSA



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- Hybrid lenses
  - Rigid gas permeable optic zone
  - Hydrogel peripheral zone
  - Have been available for 40 years
  - Their use in keratoconus was first described by Little in 1971.



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- Quarter Lambda Technologies, Inc. of SanMarcos, CA
  - commenced a focused research and development program September 2001 to create an improved hybrid contact lens.
- October 2003- company received IRB approval to begin with four of the SynergEyes products.



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- **2005** SynergEyes receives FDA approval for *SynergEyes® A* and *SynergEyes® KC*
- **2006** SynergEyes receives FDA approval for *SynergEyes® PS* and *SynergEyes® Multifocal*

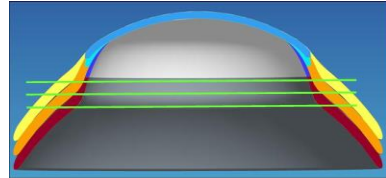
### Spherical Design

- Naturally occurring ametropia
  - Moderate to high myopes, hyperopes and astigmats who desire the pristine vision of an RGP with the all day comfort and stability of a soft lens OR
  - Any patient who has never achieved good vision with soft/soft toric lenses or who cannot tolerate the comfort of RGPs

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### A Reverse Geometry Hybrid Contact Lens Design!

- SynergEyes® PS

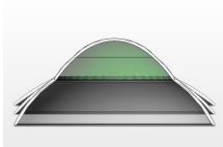


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### SynergEyes® KC

Prolate ellipsoid base curve

Spherical Skirt begins at 9.0 mm diameter



3 skirt curve options for fitting flexibility



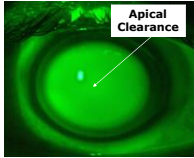
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### Patent-pending Vault design

- The vault value describes the overall relative depth of the lens on the cornea.
- The goal is to determine the appropriate vault that provides complete apical clearance.
- Design gives the ability to "vault" over the vast majority of ectasias without bearing
- Design results in substantially lower lens power:
  - Closer lens alignment to the cornea in conjunction with the lacrimal lens results in significantly lower powers
  - Enhances optical quality and improves Visual Acuity for the patient
  - Lower lens power in conjunction with superior centration substantially reduces coma and minification

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Step 1: Determine Vault



Ideal Vault Fit

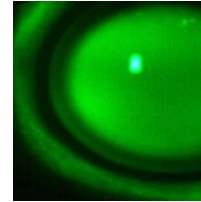
If the increased vault now results in apical clearance, you have reached the endpoint.

If the increased vault still results in bearing, increase the vault 100µ to reach the fitting endpoint.

After a few minutes of wear, the patient will tell you if you have bearing because the lens will not be comfortable.

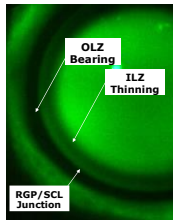
ILZ and OLZ

- **Vault** - The vault value describes the overall relative depth of the lens
- **Outer Landing Zone (OLZ)** - Portion of the lens that lands on the soft material
- **Inner Landing Zone (ILZ)** - Portion of the lens that lands on the RGP material



- Evaluate skirt only after proper vault determined and is on eye
- GOAL: on most patients, best fit landing area achieved when NaFL thinning is observed in ILZ and bearing in the OLZ.

Ideal Skirt Curve Fit

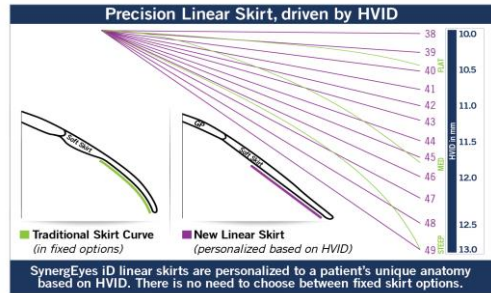


ULTRAHEALTH  
**UltraHealth** is the most advanced technology hybrid contact lens for keratoconus.

**SynergEyes iD Single Vision**

- Individually Designed for Premium Performance
- Empirically designed lens offers a streamlined fit, and a high rate of first-lens dispense, patient preference and satisfaction, and revenue retention.
- Personalized lenses made specifically for each patient by providing Ks, HVID and Rx.
- Exceptional clarity of a GP lens

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**SynergEyes ID Parameters**

Diameter	14.5mm
Skirt	38 to 49 in increments of 1 step to accommodate HVID range of 10.0 to 13.0mm. HVID outside the measurements will default to 10.0 or 13.0mm.
Base Curves	7.10mm to 8.30mm in increments of 0.01mm
Single Vision Lens Powers	+10.00 to -15.00D +8.00 to -8.00D in 0.25D steps +8.50 to +10.00D in 0.50D steps -8.50 to -15.00D in 0.50D steps

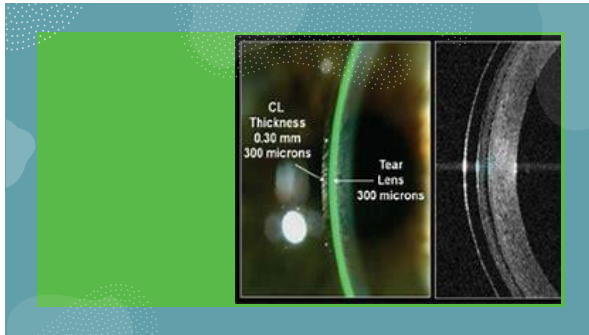
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**Additional Options:**

- Tangible Hydra-PEG coating available on request
- If your patient requires a thicker GP lens to reduce flexure and mask higher amounts of corneal cylinder, they would benefit from the Enhanced Profile Design. Enhanced Profile is automatically added to orders with 2.50D or more of corneal cylinder, and may be requested for less amounts of corneal cylinder.

UV Blocker	UVA and UVB
Recommended Wear & Replacement	Daily Wear Recommended replacement every 6 months

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ULTRAHEALTH FC

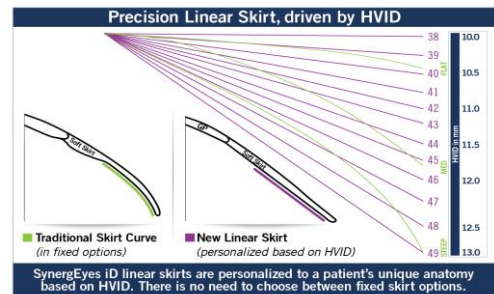
- UltraHealth FC is also available for post-refractive surgery patients. The oblate base curves offered in this addition to the UltraHealth family of lenses are well suited for post-Rk, post-LASIK and other cornea trauma conditions.

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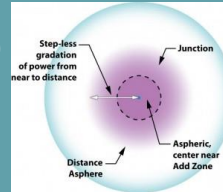
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### SynergEyes ID Multifocal EDOF



- Presbyopic wearers can experience clearer vision at all distances with the proprietary Multifocal Extended Depth of Focus (EDOF) optical design
- Even those with astigmatism will experience clear, stable vision, without the hassle of blur caused by toric lens rotation.

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### SynergEyes ID Multifocal EDOF

Power Profile is **non-monotonic and non-periodic**. This unique power profile provides:

- Good vision at all viewing distances, minimizing visual disturbances like ghosting and halos
- Consistent performance across pupils, decentration and individual's ocular aberrations

**SynergEyes ID MF EDOF: Patented Optical Design Technology**

Continuously and rapidly varying power profile. Non-monotonic and aperiodic. Not a zonal bifocal, aspheric or diffractive. Illustrative power profile only.

**Other Commercially Available Multifocal Designs**

Zonal concentric lenses: Periodic power changes discrete and wide zones of same power.

Aspheric lenses: Monotonic progressive power change.

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Multifocal Lens Powers	+5.50 to -10.00D +5.50 to -8.00D in 0.25D steps -8.50 to -10.00D in 0.50D steps Add Power: Low, Medium, High

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