

AMERICAN ACADEMY  
of OPTOMETRY

## Precision Prescribing of Gas Permeable Contact Lenses

Matthew Lampa, OD, FAAO

Disclosure Statement:

- Alcon
- Ciba Vision
- Bausch + Lomb
- SpecialEyes
- Valley Contax
- Vistakon

Please silence all mobile devices. Unauthorized recording of this session is prohibited.

AMERICAN ACADEMY  
of OPTOMETRY

Please complete your session evaluation using EyeMAP online at <http://eyemap.cistems.net>

Tweet about this session using the official meeting hashtag #aaoptom13

## Precision Prescribing of Gas Permeable Contact Lenses

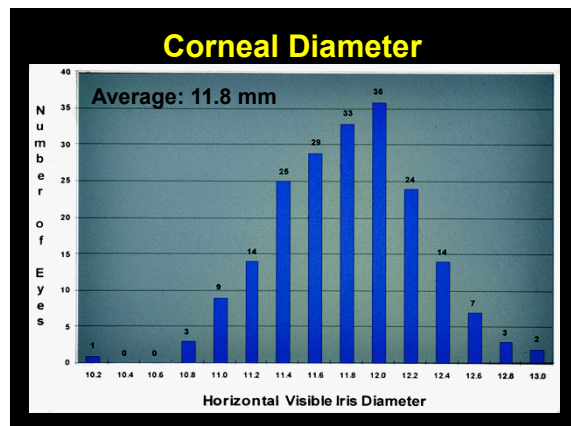
## GP Fitting

- #1 Lens Diameter
- #2 Base Curve Radius
- #3 Lens Power

## Step #1

Overall Lens Diameter, Measure (Horizontal Visible Iris Diameter)

Traditional GP Lens Diameters: = 8.0 to 10.0 mm



## Corneal Diameter / Lens Diameter

### HVID

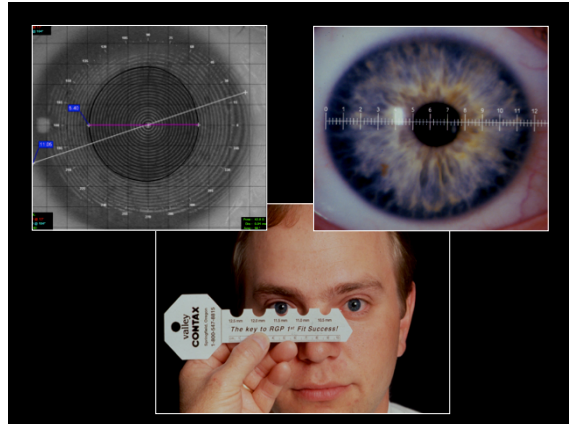
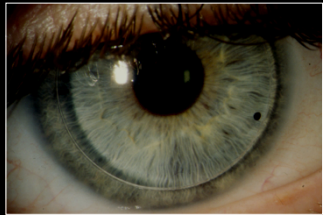
- 11.4 mm or less

- 11.5 mm and greater

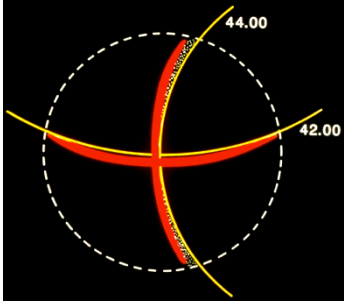
### Lens Diameter

9.0 mm

9.5 mm



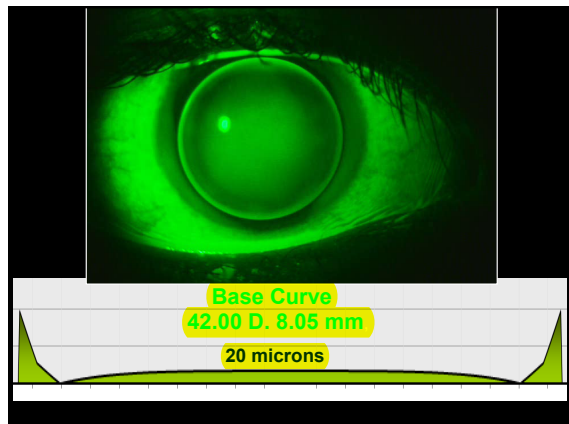
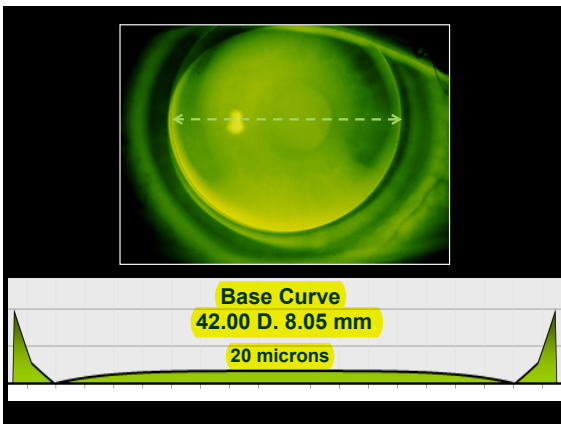
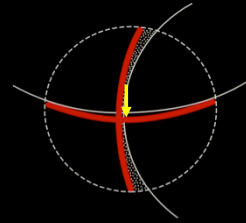
## Step #2 Base Curve Radius Relationship to "Flat K"

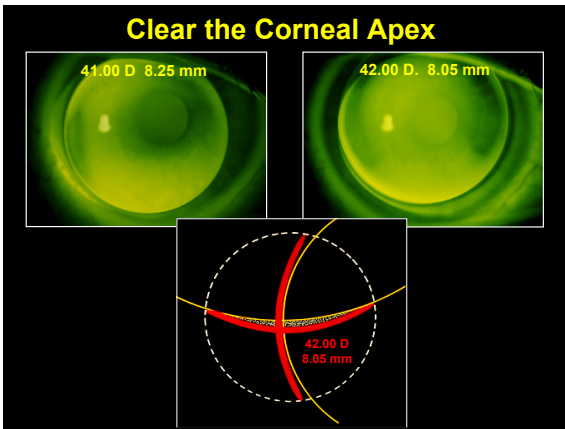
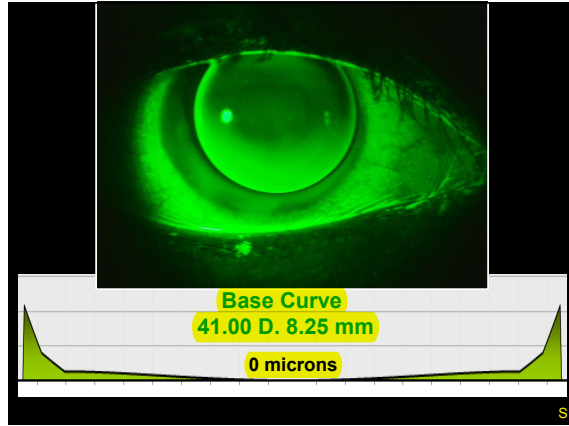
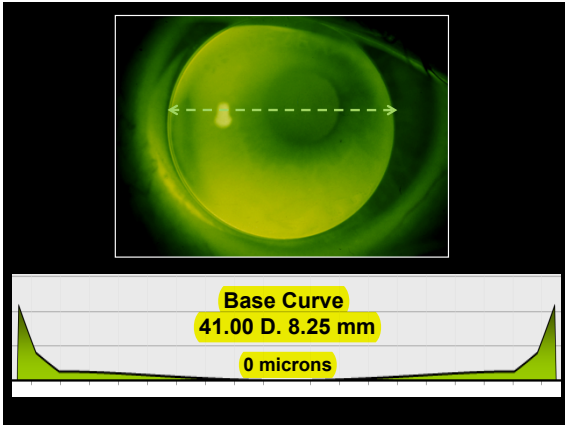


ON FLAT "K"  
BC = 42.00 D.  
Alignment Fitting  
Relationship

## GP Fitting Factors

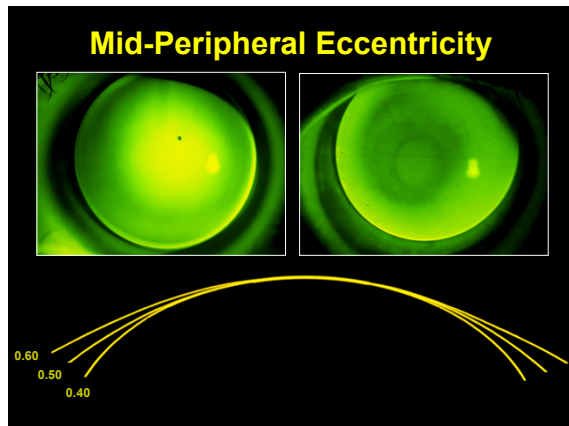
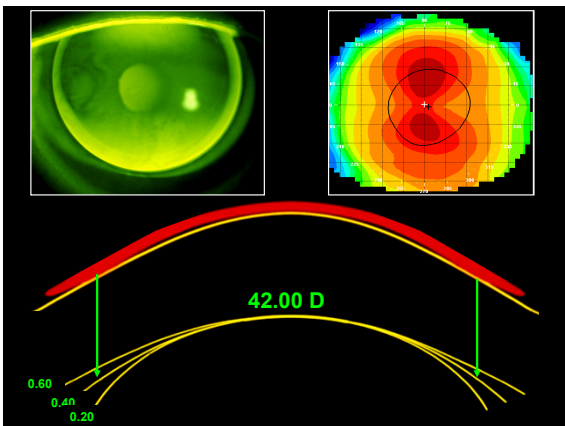
- The center of the lens should clear the central cornea.
- There should be a midperipheral contact point along the horizontal meridian
- The lens should maintain unobstructed movement along the vertical meridian

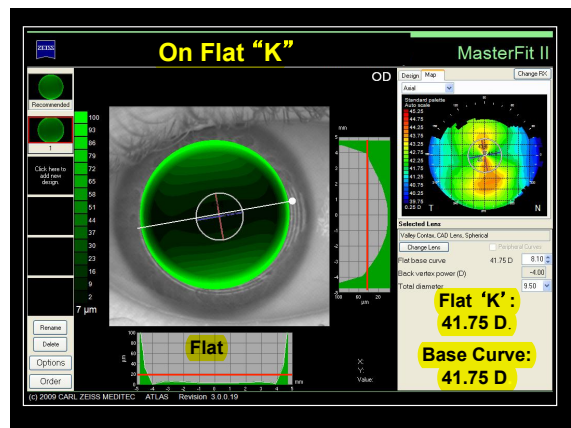
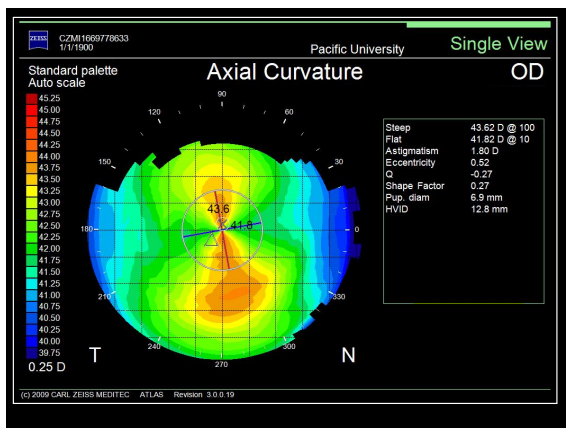
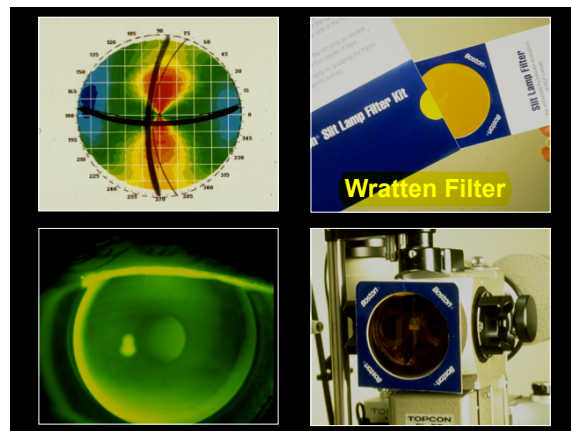
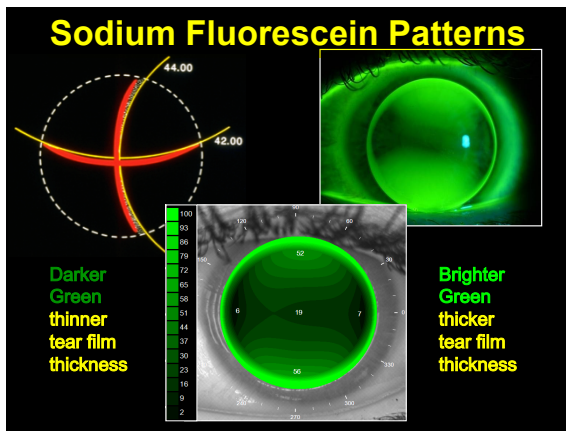
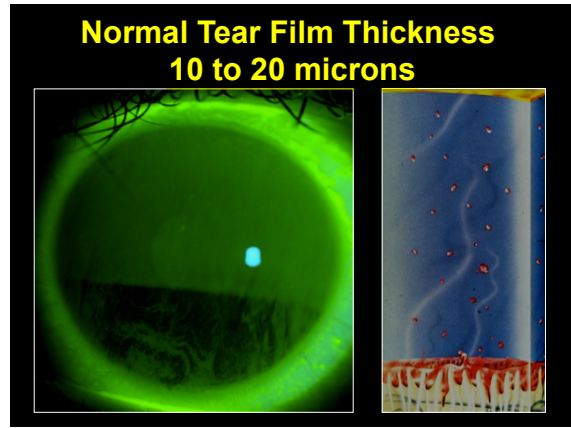
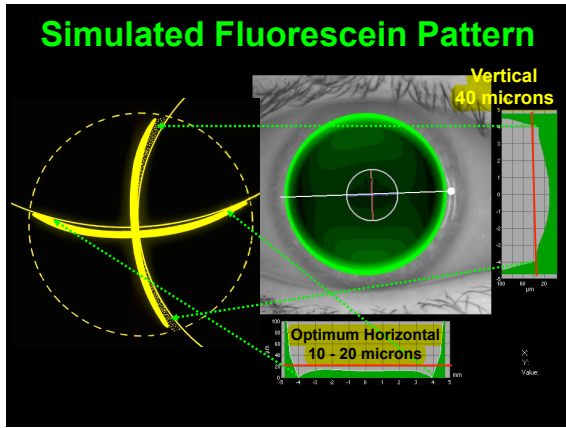


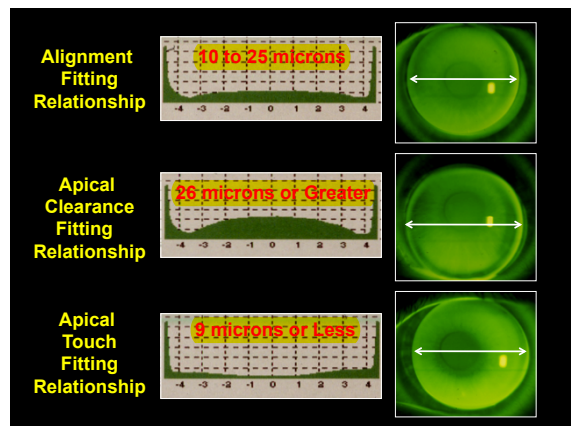
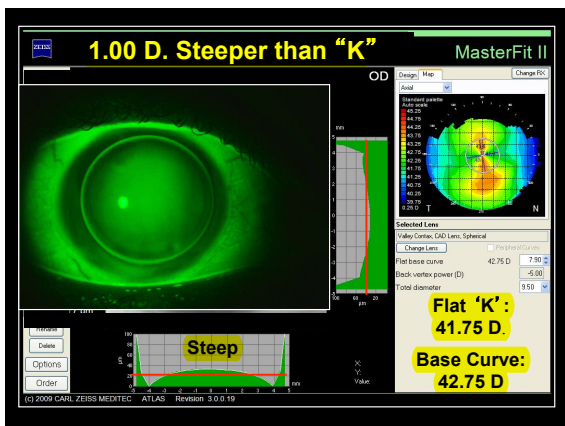
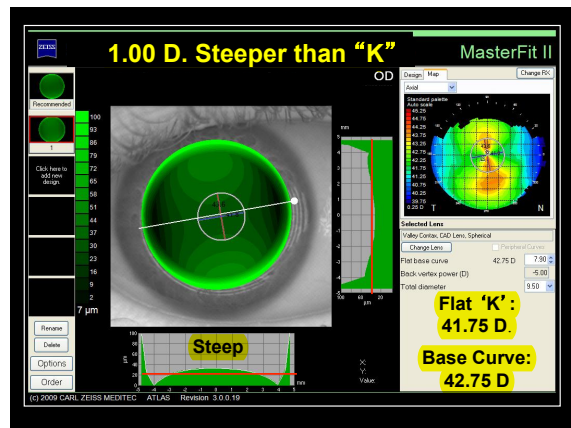
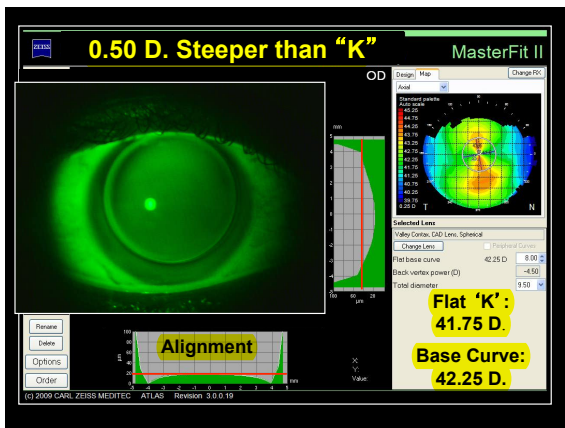
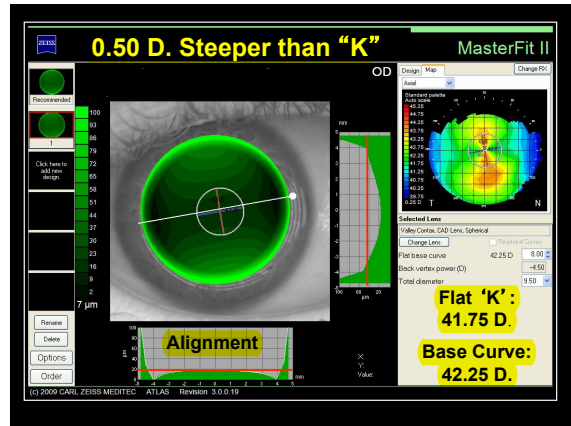
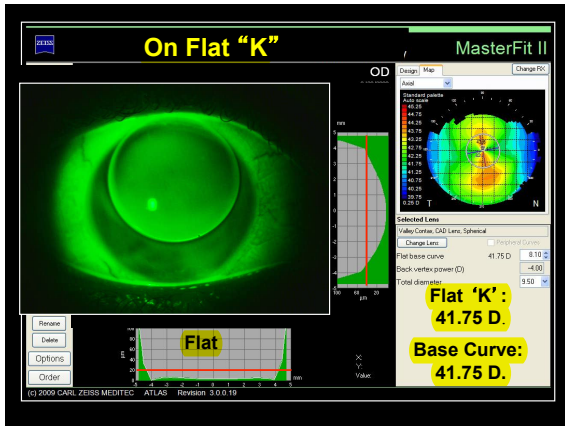


### GP Fitting Factors

- The center of the lens should clear the central cornea.
- There should be a mid-peripheral contact point along the horizontal meridian
- The lens should maintain unobstructed movement along the vertical meridian

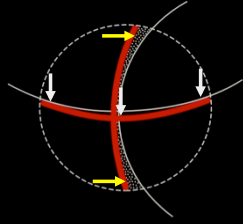




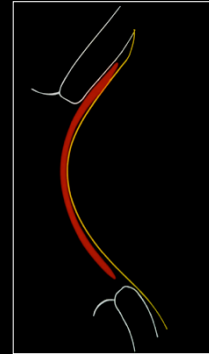
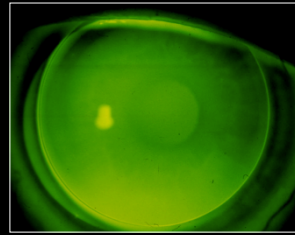


## GP Fitting Factors

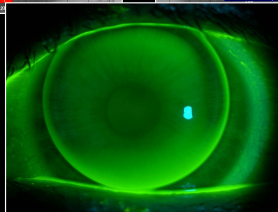
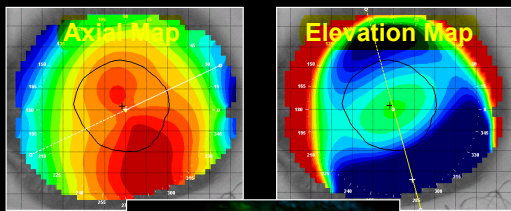
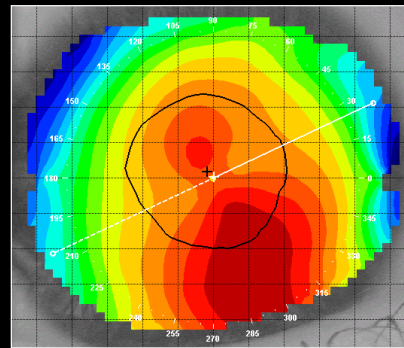
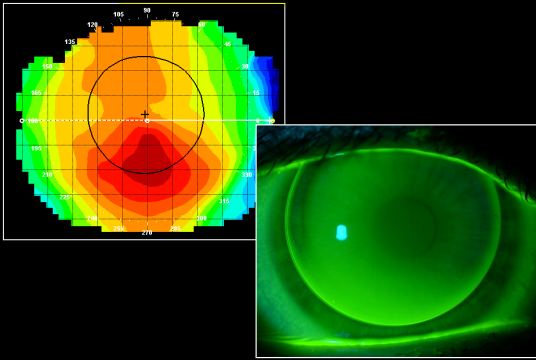
- The center of the lens should clear the central cornea.
- There should be a midperipheral contact point along the horizontal meridian
- The lens should maintain unobstructed movement along the vertical meridian



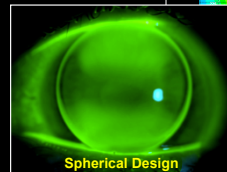
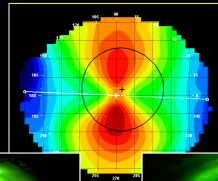
## Inferior Clearance



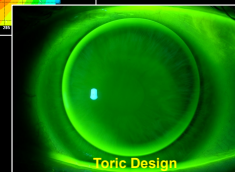
## Inferior Clearance



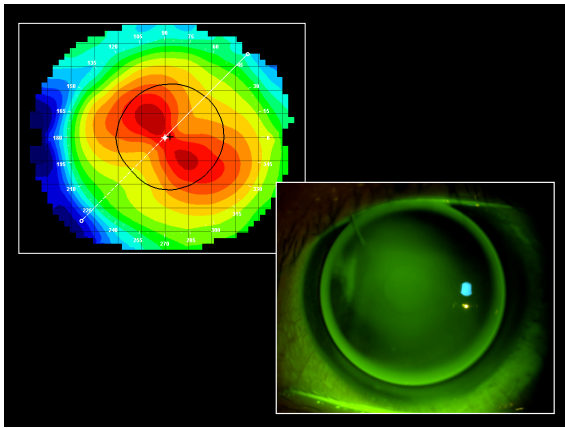
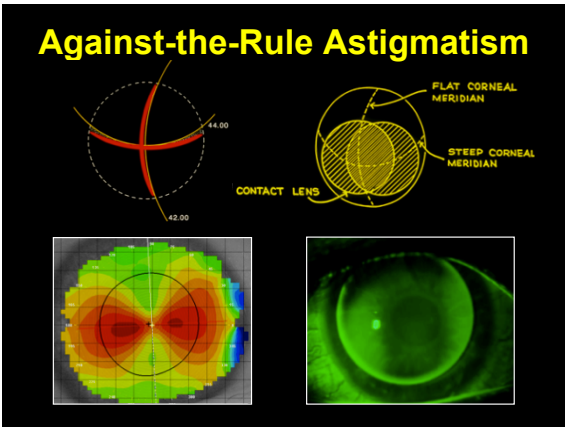
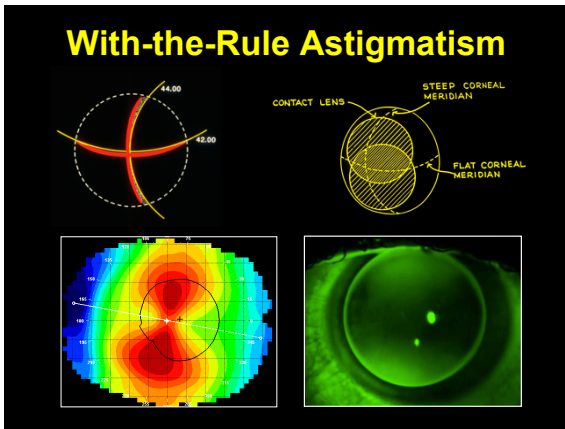
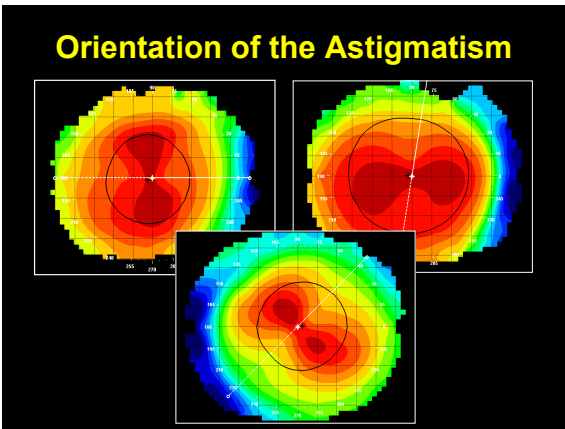
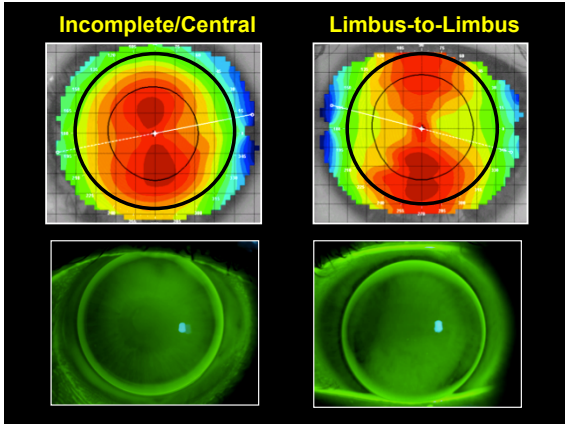
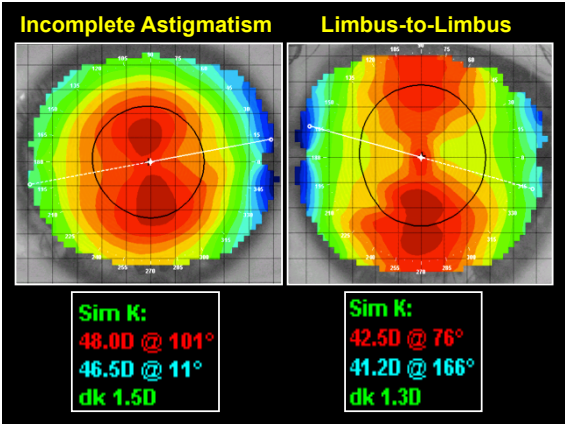
## Management of Astigmatism With Gas Permeable Lenses

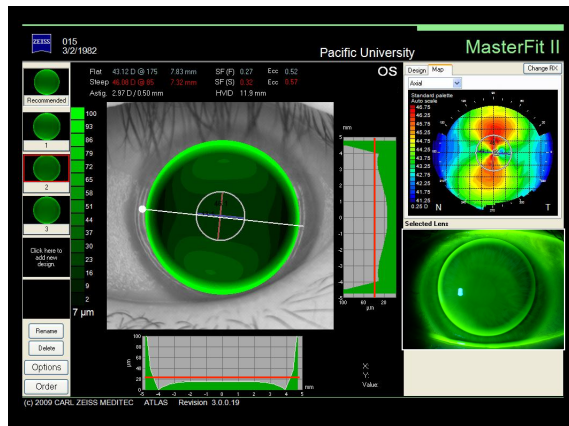
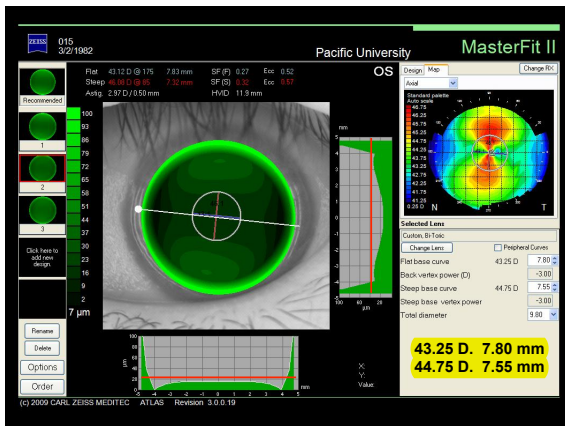
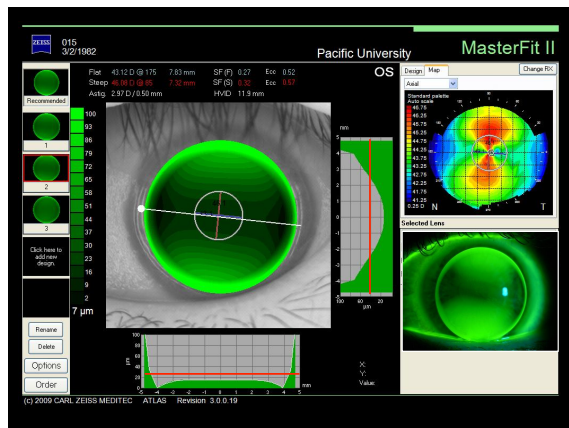
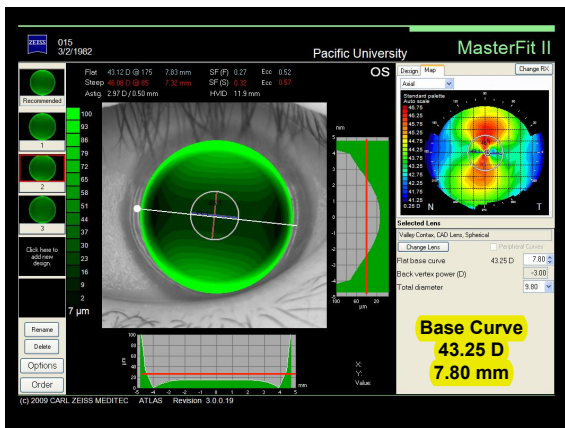
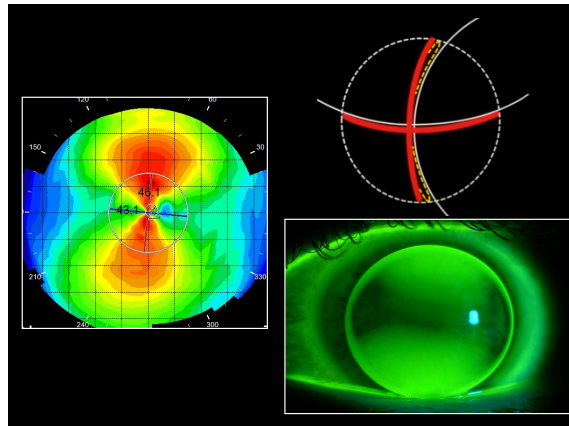
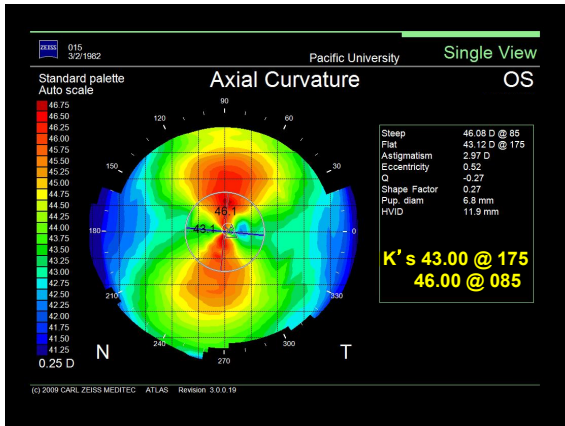


Spherical Design

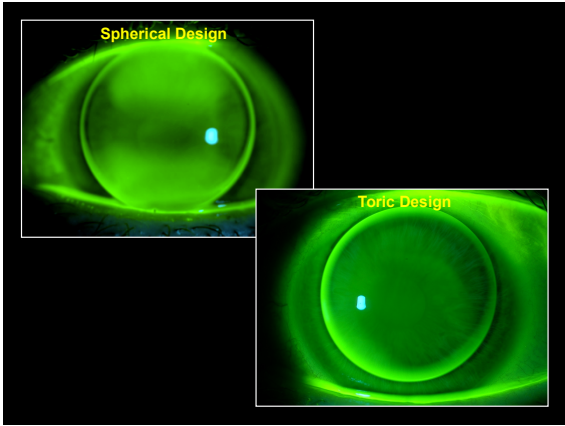


Toric Design









### Step #3 Lens Power

1. Spherical overrefraction  
*If the VA is not correctable to 20/20 or BCVA*
2. Sphero-cylinder overrefraction

### Alignment

Steeper Than "K"

Flatter Than "K"

### Lens Power

44.75 (7.55)

45.00 (7.50)

PLANO

42.75 (7.89)

45.00 (7.50)

-3.00

46.50 (7.25)

45.00 (7.50)

+3.00

### Peripheral Lens Design

Base Curve →

### RGP Lens Periphery

- Multiple Spherical Radii
- Aspheric
- Tangent

## Secondary Curve

The Secondary Curve provides clearance of the lens in primary gaze and alignment with lateral gaze.

Example:

Base Curve

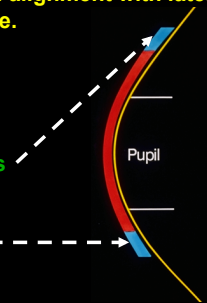
42.75 D (7.90 mm)

Secondary Curve Radius

8.90 mm

Secondary Curve Width

0.4 mm



## Peripheral Curve

It is designed to clear the peripheral cornea and Limbus, radius 10.00 to 12.50

Example: Base Curve

42.75 D (7.90 mm)

Secondary Curve Radius

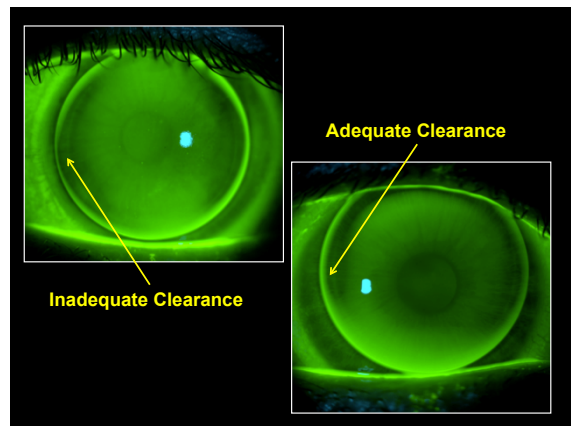
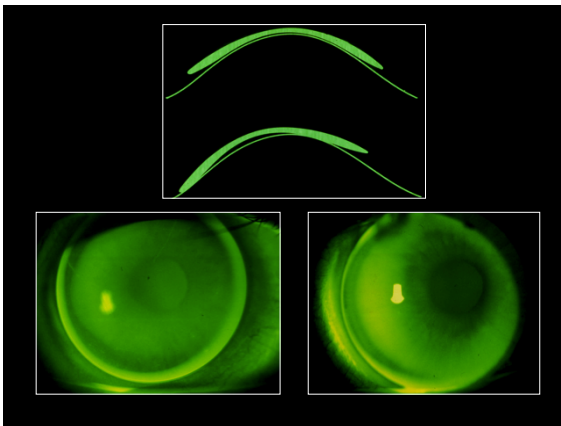
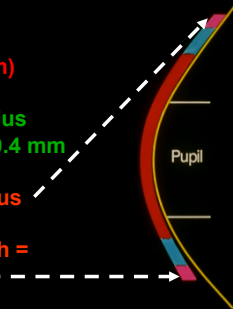
8.90 mm, Width 0.4 mm

Peripheral Curve Radius

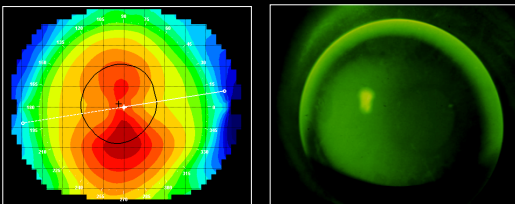
11.50 mm

Peripheral Curve Width =

0.3 mm



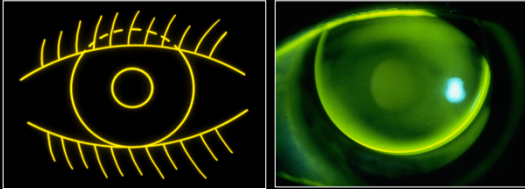
## Obstructed Vertical Movement *Central or incomplete Astigmatism*



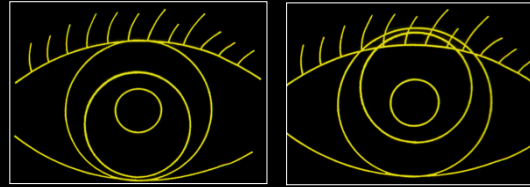
## Upper Lid At the Superior Limbus



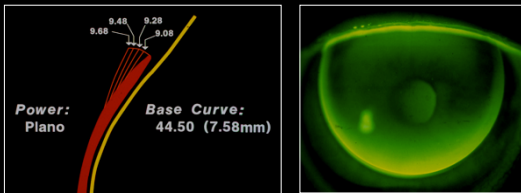
### Upper Lid *Below* the Superior Limbus



### Upper Lid Position and Lenticulation



### Lenticulation



### Gas Permeable Lens Institute [WWW.GPLI.INFO](http://WWW.GPLI.INFO)

- Click N' Fit
- GP Calculator
- Grand Rounds Trouble Shooting
- Many Other Resources

