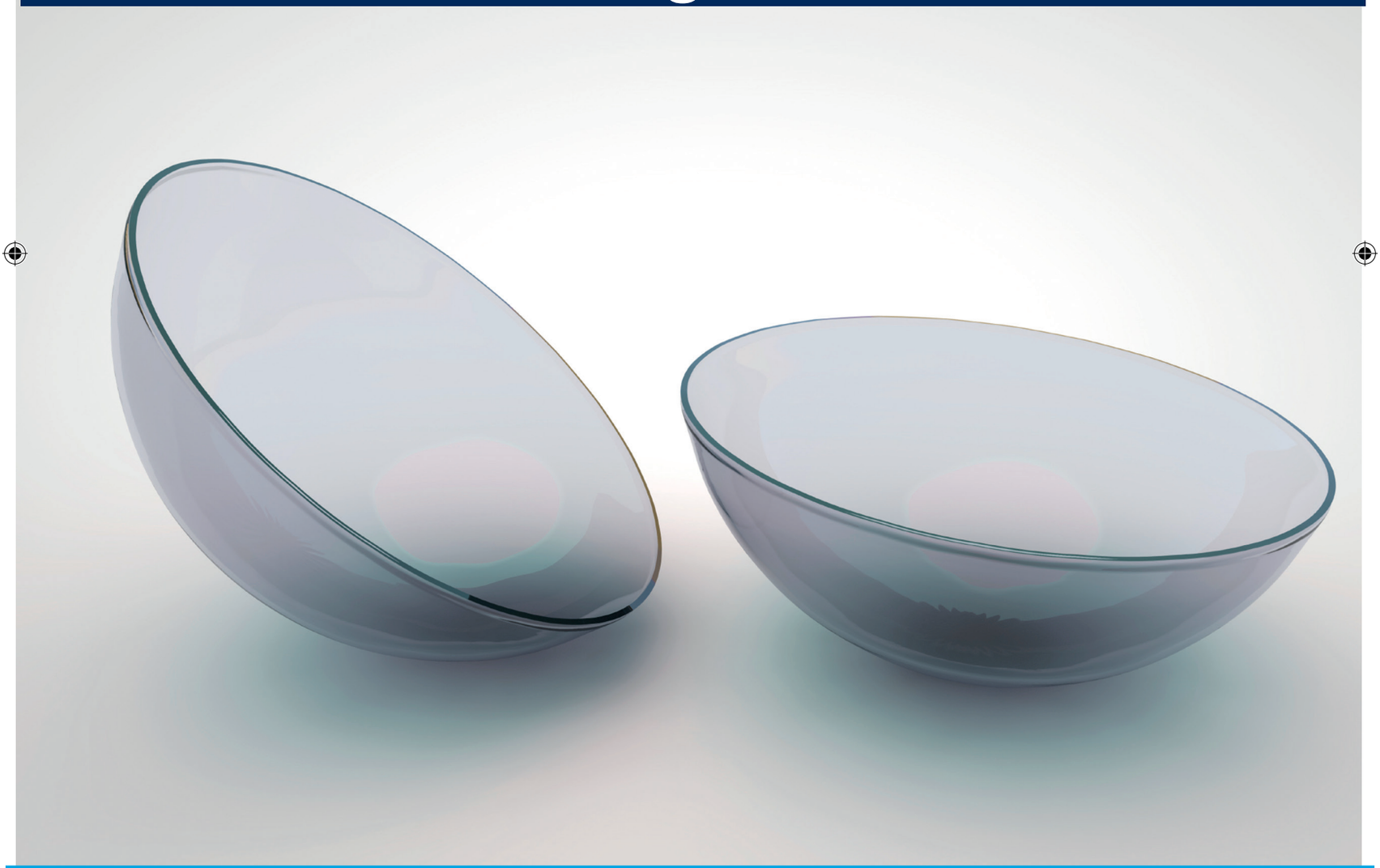
ICD

IRREGULAR CORNEAL DESIGN

FLEXFIT®

# Fitting Guide



KATT DESIGNGROUP

ICD
IRREGULAR CORNEAL DESIGN
FLEXFIT®

# Fitting Guide

## A Unique Scleral Lens System

The ICD FLEXFIT is a unique scleral lens system offering an all-in-one solution for both irregular and normal corneas.

Available in both 16.3mm and 14.8mm diameters, this advanced scleral lens design will allow you to “FLEX” in 0.1mm increments across a wide diameter range for a custom fit.

The ICD FLEXFIT is designed as a 4-Zone lens featuring Auto-FLEX technology to easily make increment adjustments to the vault or landing, while auto-adjusting the sagittal depth exactly to your patient’s cornea.

Even the most challenging patients can look forward to receiving a perfect fit with ICD FLEXFIT.

**ICD FLEXFIT 16.3mm**

| SAGITTAL DEPTH | POWER |
|---|---|
| 3,800 | +2.00 |
| 4,000 | Plano |
| 4,200 | -2.00 |
| 4,400 | -4.00 |
| 4,600 | -6.00 |
| 4,800 | -8.00 |
| 5,000 | -10.00 |
| 5,200 | -12.00 |
| 5,400 | -14.00 |

**ICD FLEXFIT 14.8mm**

| SAGITTAL DEPTH | POWER |
|---|---|
| 3,400 | -4.00 |
| 3,600 | -6.00 |
| 3,800 | -8.00 |
| 4,000 | -10.00 |
| 4,200 | -12.00 |

16.3
AND
14.8

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IRREGULAR CORNEAL DESIGN
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# Fitting Guide 16.3mm

## Step 1

Select Initial
ICD FLEXFIT
Diagnostic Lens

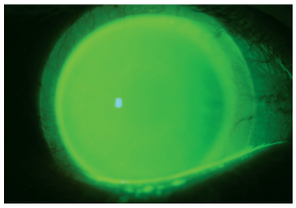
| Identify the Corneal Condition | ICD FLEXFIT 16.3mm for Irregular and Normal Corneas |
|---|---|
| **Normal Depth Eyes**<br>- Normal Shape eyes<br>- Median Flat K-Reading<br>- Ocular Surface Disease<br>- Post Refractive Surgery | Start with the ICD FLEXFIT 16.3mm 4,000µm Sag |
| **Median Depth Eyes**<br>- Early to Moderate Keratoconus<br>- Pellucid Marginal Degeneration<br>- Low Depth Corneal Transplants | Start with the ICD FLEXFIT 16.3mm 4,400µm Sag |
| **High Depth Eyes**<br>- Advanced Keratoconus<br>- High Depth Corneal Transplants | Start with the ICD FLEXFIT 16.3mm 4,800µm Sag |

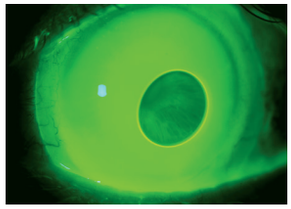
## Step 2

ICD FLEXFIT
Lens Application
Must Be Applied
Without A Bubble

- Clean and prepare the lens for application
- Fill the bowl full of preservative-free saline
- Add fluorescein
- Instruct the patient to stand and lean forward with their head parallel to the ground
- Have the patient pull back on both upper and lower lids using both hands
- Apply the lens with a lens applicator using two fingers and the thumb if needed, for enhanced stability
- If a bubble exists, remove the ICD FLEXFIT lens with the DMV® lens removal device and re-apply

**Lens Application**

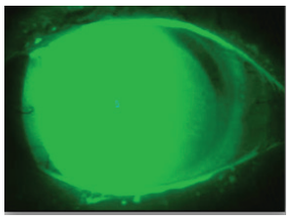

**Proper Application**


**Application Bubble**

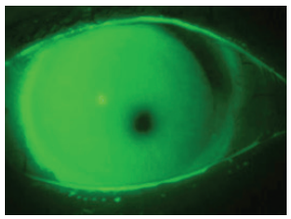
16.3

# Step 3

## Evaluate ICD FLEXFIT Central Corneal Zone for Full Clearance



**4,800 sag**
**Acceptable clearance**



**4,400 sag**
**Unacceptable**
**Corneal touch**
Apply the next deeper diagnostic lens

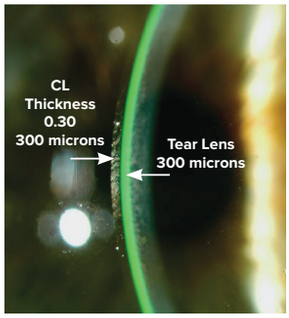
# Step 4

## Evaluate ICD FLEXFIT for Full Corneal Clearance and Measurement of Vault

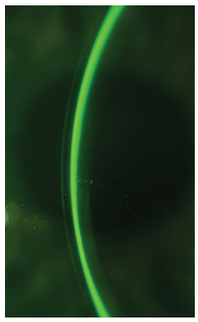
### Slit Lamp Exam

**Use Optic Section**

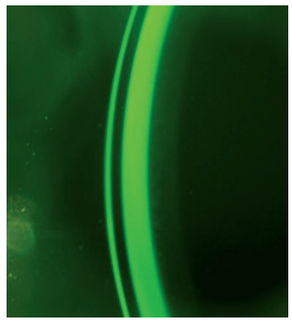
- White light with fluorescein
- ICD FLEXFIT standard thickness = 300 microns
- Ideal tear film thickness = 300 microns
  Ensure a minimum of 300 microns of corneal vault to allow for lens settling over time




**Ideal Initial Vault**



**Vault too Shallow**
Try on the next deeper lens



**Vault too Deep**
Try on the next shallower lens

# Step 5

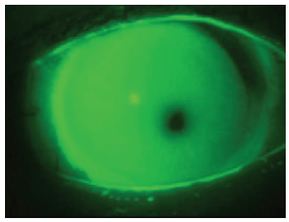
60 Minutes Post Application of the ICD FLEXFIT Diagnostic Lens

Slit Lamp Exam

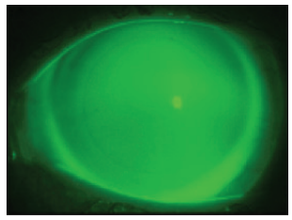
**Central Clearance Zone (CCZ)**

The diagnostic lens should completely vault the central cornea.

- Apply higher or lower sagittal depth diagnostic lenses to increase or decrease the central corneal clearance.



**Corneal Bearing - Increase Sag**

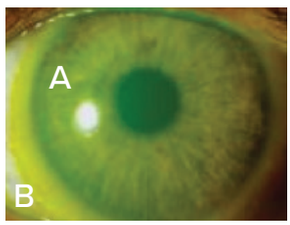


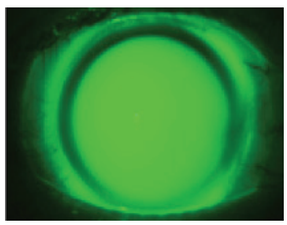
**Ideal Clearance**

**Note:** *Once you diagnostically achieve an acceptable apical clearance, it is important to remember that the lens will "settle" on the eye. After time, the lens may produce a different fluorescein pattern than on initial application.*

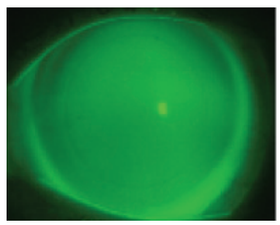
**(PCCZ) Peripheral Corneal Clearance Zone and (LCZ) Limbal Clearance Zone**

- The diagnostic lens should completely vault the peripheral cornea and limbus and "land" with all its weight on the sclera
- To observe clearance in this area, use white light to assess the fluorescein's "excursion" from the cornea past the limbus (A) and out onto the sclera with the absence of fluorescein near the edge (B)
- Order a modified LCZ (+) if the peripheral cornea and/or limbal depth are insufficient



**Inadequate PCCZ**



**Ideal Post-settling Pattern**

16.3

# Step 5

## 60 Minutes Post Application of the ICD FLEXFIT Diagnostic Lens

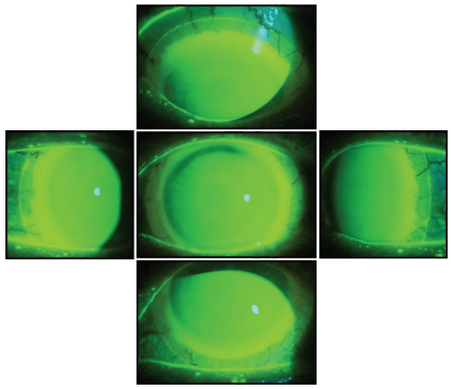
### Slit Lamp Exam

**Scleral Positioning**

Due to the asymmetrical shape of the sclera, scleral lenses tend to position temporally and inferiorly.

The view in primary gaze may give the appearance of inappropriate limbal touch superior and nasal.

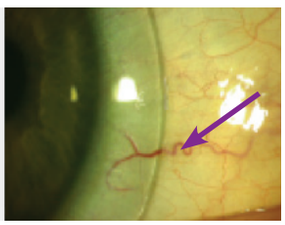
- Ask the patient to look left, right, up and down to confirm appropriate peripheral corneal clearance and limbal clearance.



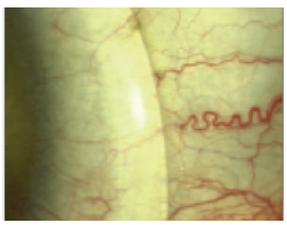
**Scleral Landing Zone (SLZ)**

- View the SLZ to determine if there is excessive edge lift, excessive tightening or blanching
- Verify that the Scleral Landing Zone (SLZ) is aligning with the conjunctiva, 360 degrees around the sclera.
- Order the following adjustment based on the degree of tightness present:
  - Mildly tight: order SLZ -1 (One acute area of vessel restriction)
  - Moderately tight: order SLZ -2(Opposing sides of vessel restriction)
  - Severely tight: order SLZ -3 (>180° of vessel restriction)

*Every degree of angle change (+ or -) raises or lowers the sagittal depth 25 microns*



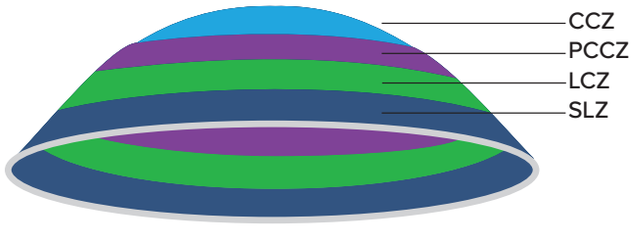
**Appropriate landing**
No restriction of blood flow under edge



**Restriction of blood vessels and blanching**

16.3

# Adjustable Fitting Zones Chart




- Adjustments in clearances are best accomplished by increasing or decreasing the PCCZ (peripheral cornea) and/or the LCZ (limbus) depending on where the change is required
- Adjustments can be made in steps of 25 microns
- Example: 4 steps = 100 microns

*Any adjustment to these zones will affect the overall sagittal depth of the lens by the amount of the change.*

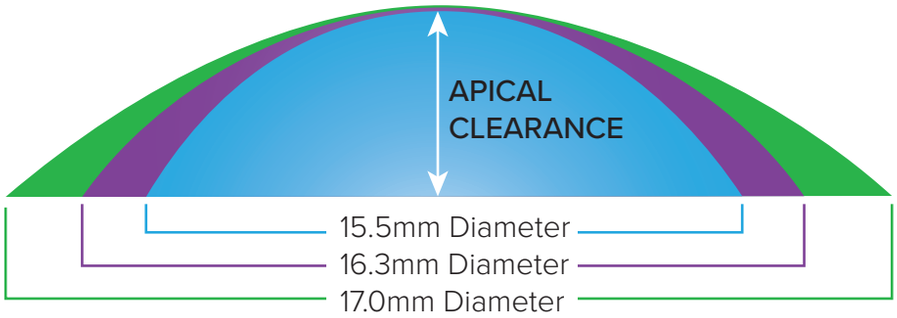
Each 1 step change in either the PCCZ or the LCZ
= 25 microns of sagittal depth change

Each 1 step change in the SLZ angle
= 25 microns of sagittal depth change

**PCCZ and LCZ**
**Example:** A +/- 4 step change will affect the lens sagittal depth 100 microns

**SLZ**
**Example:** A 2-step change in the angle of the Scleral Landing Zone will affect the lens sagittal depth 50 microns

Changes in diameter can be made and the Auto-FLEX feature will maintain Apical Clearance.




16.3

## Step 6
Determine the Lens Power

- Perform both a spherical (or if required) sphero-cylindrical over-refraction to determine the lens power

## Step 7
Contact Us to Place Your ICD FLEXFIT Order

**Specifications required for ordering**
- Sag of ICD FLEXFIT diagnostic lens
- Diagnostic lens power
- Spherical over-refraction
- Modifications to PCCZ, LCZ, SLZ

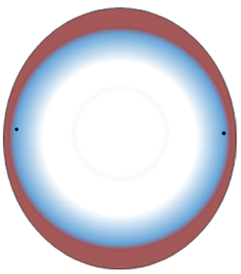
**If you require consultation to optimize the fit, make sure that you measure and note the apical clearance of your selected diagnostic lens.*

# ICD FLEXFIT 16.3mm Toric

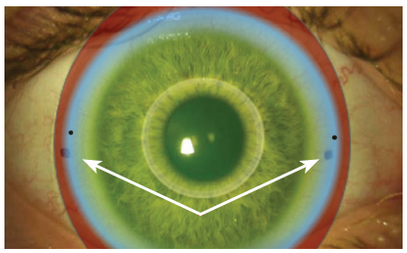
## Use ICD FLEXFIT Front Surface Toric when Correcting Residual or Lenticular Astigmatism

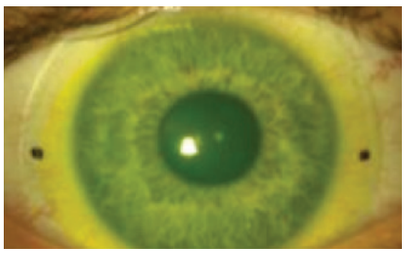
When a sphero-cylindrical over refraction significantly improves the best corrected vision, front toric optics can be incorporated. The ICD FLEXFIT 16.3mm comes standard with ALZT (Asymmetric Landing Zone Technology™).

The periphery of the design is “Dual Depth”, having 125 microns of elevation difference to better align on the asymmetric nature of the sclera and provide a comfortable landing 360°.



**The “Dual Depth” with ALZT provides the rotational stability required for Front Surface Toric options.**





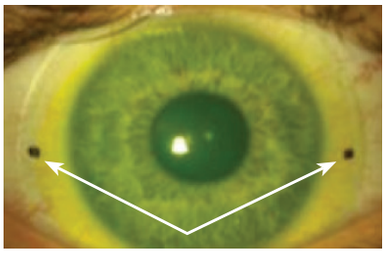
16.3

# Use ICD FLEXFIT Front Surface Toric when Correcting Residual or Lenticular Astigmatism

**The ICD FLEXFIT 16.3mm Front Surface Toric Optics Design**

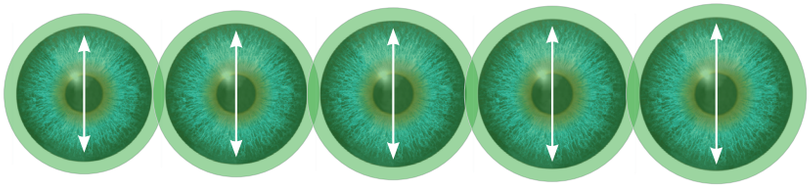
Position and stability of the Dual Depth Scribe (DDS) markers

- With the lens in place, locate the two flat meridian DDS markers
- Note the axis of the toric DDS markers after 2-3 minutes of lens settling and confirm the lens is rotationally stable
- Perform a sphero-cylindrical over-refraction and order the lens



**“Flexing the Diameter” The ICD FLEXFIT 16.3mm design**

- The ICD FLEXFIT 16.3mm design can be “flexed” in diameter.
- The diameter can range (from the standard 16.3mm) down to 15.5mm and up to 17.0mm in 0.1mm increments, while maintaining the desired apical clearance.



15.5mm 15.7mm 16.3mm 16.7mm 17.0mm

**Indications for “Flexing” the diameter**

- Fitting inside or vaulting pingueculae
- Filtering blebs
- Small apertures/Deep set eyes
- Application and removal challenges
- Larger diameters for Ocular Surface Disease

**Specifications required for ordering**

- Sag of ICD FLEXFIT diagnostic lens
- Diagnostic lens power
- Spherical over-refraction
- Modifications to PCCZ, LCZ, SLZ

** If you require consultation to optimize the fit, make sure that you measure and note the apical clearance of your selected diagnostic lens.*

16.3

ICD
IRREGULAR CORNEAL DESIGN
FLEXFIT®

# Fitting Guide 14.8mm

## Step 1

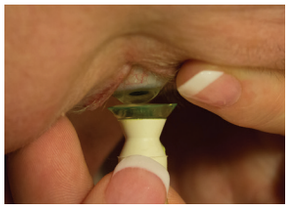
Select 3,400 Sagittal Depth for Initial Evaluation

| SAGITTAL DEPTH | POWER |
|---|---|
| 3,400 | -4.00 |
| 3,600 | -6.00 |
| 3,800 | -8.00 |
| 4,000 | -10.00 |
| 4,200 | -12.00 |

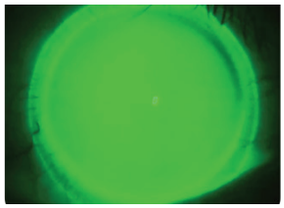
## Step 2

Application of Diagnostic Lens

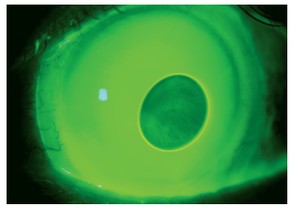
- Clean and prepare the lens for application
- Fill the bowl full of preservative-free saline
- Add fluorescein
- Instruct the patient to stand and lean forward with their head parallel to the ground
- Have the patient pull back on both upper and lower lids using both hands
- Apply the lens with a lens applicator using two fingers and the thumb if needed, for enhanced stability
- If a bubble exists, remove the ICD Flex Fit™ lens with the DMV® lens removal device and re-apply Bubble



**Lens Application**



**Proper Application**

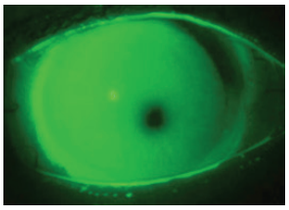


**Application Bubble**

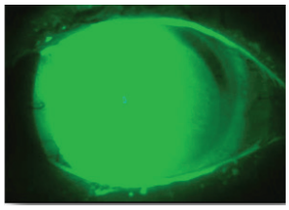
14.8

# Step 3

## Evaluate (CCZ) Central Clearance Zone for Sufficient Apical Clearance



**3,600 sag**
**Unacceptable**
**Corneal touch**
Apply the next deeper diagnostic lens



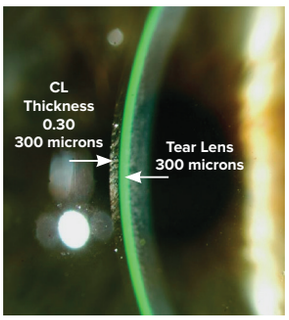
**3,800 sag**
**Acceptable clearance**

# Step 4

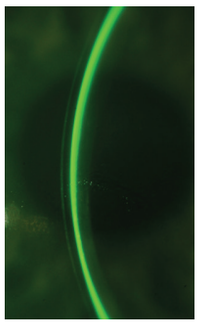
## Estimating Central (Apical) Clearance

**Use Optic Section**

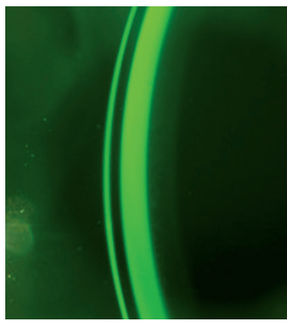
- White light with fluorescein
- ICD FLEXFIT standard thickness = 300 microns
- Ideal tear film thickness = 300 microns
  Ensure a minimum of 300 microns of corneal vault to allow for lens settling over time




**Ideal Initial Vault**



**Vault too Shallow**
Try on the next deeper lens



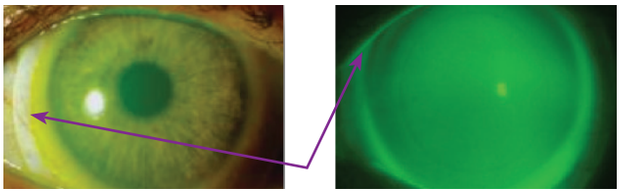
**Vault too Deep**
Try on the next shallower lens

# Step 5

## Peripheral Lens Evaluation

The diagnostic lens should completely vault the peripheral cornea and limbus, and “land” with all of its weight on the sclera.

Ideally, fluorescein is evident from the peripheral cornea, over the limbus and onto the sclera, with the absence of fluorescein near the edge.



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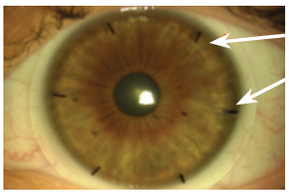
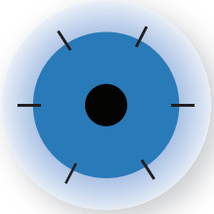
# Step 6

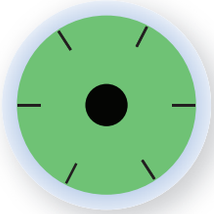
## Determining OAD (Over All Diameter) and Ensuring Limbal Clearance Using Scribe Markers



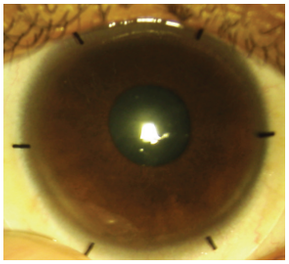
**New Patent Pending Technology!**
Use the Scribe Markers on the diagnostic lens to instantly observe the location of LCZ (Limbal Clearance Zone) and easily determine the OAD required to safely clear the limbus.



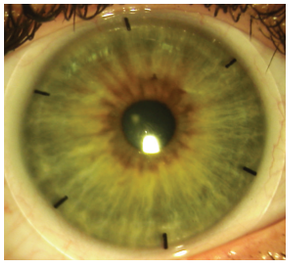
**Ideal Diameter**
Scribe Markers past the limbus



**Flex the Diameter Larger**
Scribe Markers inside the limbus



**Ideal Diameter**



**Flex the Diameter Larger**

When you need to flex the diameter to be larger, order the **Flex 3** Option, which provides the necessary clearances algorithmically by auto-adjusting:

- The PCCZ (Peripheral Corneal Clearance Zone)
- The LCZ (Limbal Clearance Zone)
- The Diameter

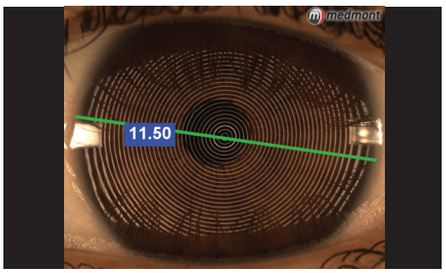
See page 14 for complete details on the **Flex 3** Option.

# Step 7

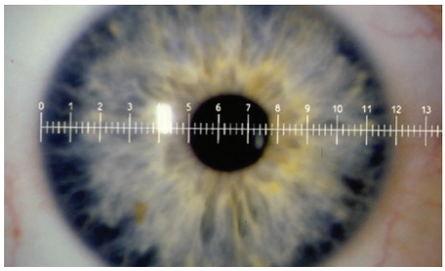
Calculating the Diameter with VID (Visible Iris Diameter)

**Measure the VID and add 3.5mm**
**Example:** VID measures 11.5mm + 3.5mm = OAD (Over All Diameter)
15.0 mm ICD FLEXFIT lens

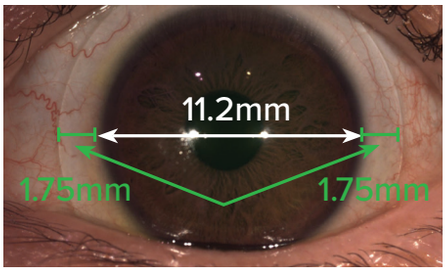
**Measurement Methodology** VID (Visible Iris Diameter)




**VID Corneal Topography**

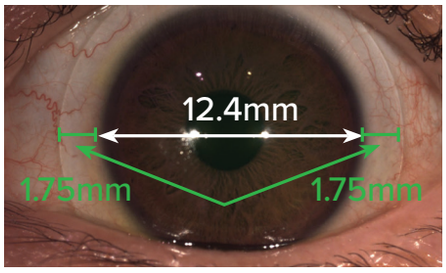


**Measuring Corneal Diameter**
Slit Lamp Reticule




**Corneal Diameter / Lens Diameter**

VID 11.2mm + 3.5mm = 14.7mm




**Corneal Diameter / Lens Diameter**

VID 12.4mm + 3.5mm = 15.9mm
For calculated diameters above 15.5mm, the 16.3mm ICD FlexFit must be chosen (maximum diameter for the 14.8mm ICD FlexFit is 15.5mm)

14.8

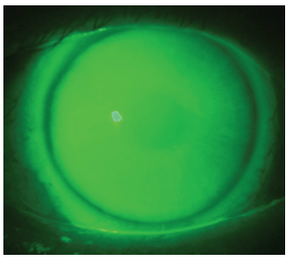
## Step 7

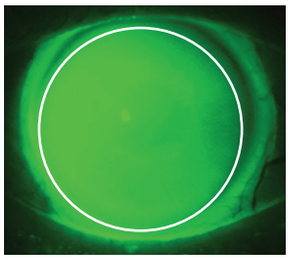
Calculating the Diameter with VID (Visible Iris Diameter)

# The Flex 3 Option

**for Mid-Peripheral Touch and/or Limbal Landing**

In the presence of **ANY** Mid-Peripheral Touch or Limbal Bearing that appears more than 180° circumferentially, order the **FLEX 3** Option for this patient at the Initial Evaluation or at a Follow-up visit.

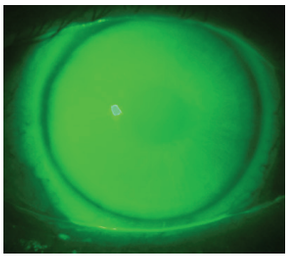




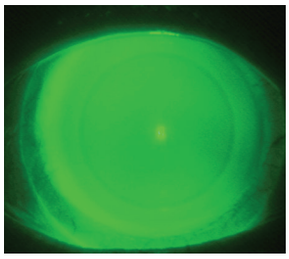
**The FLEX 3 Option provides the necessary clearance through the auto-adjusting:**

- The PCCZ (Peripheral Corneal Clearance Zone)
- The LCZ (Limbal Clearance Zone)
- The Diameter

The **FLEX 3** Option will provide the appropriate vault from the peripheral cornea out through to the sclera



**Peripheral Touch**



**After the FLEX 3 Auto-adjustment**

14.8

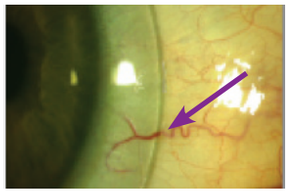
# Step 8

## (SLZ) Scleral Landing Zone evaluation

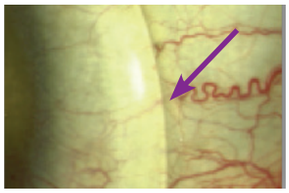
**Scleral Landing Zone (SLZ)**

- View the SLZ to determine if there is excessive edge lift, excessive tightening or blanching
- Verify that the Scleral Landing Zone (SLZ) is aligning with the conjunctiva, 360 degrees around the sclera.
- Order the following adjustment based on the degree of tightness present:
  - Mildly tight: order SLZ -1 (One acute area of vessel restriction)
  - Moderately tight: order SLZ -2 (Opposing sides of vessel restriction)
  - Severely tight: order SLZ -3 (>180° of vessel restriction)

*Every degree of angle change (+ or -)*
*raises or lowers the sagittal depth 25 microns*



**Appropriate landing.**
No restriction of blood flow under edge



**Restriction of blood vessels and blanching**

**Removing the Lens**

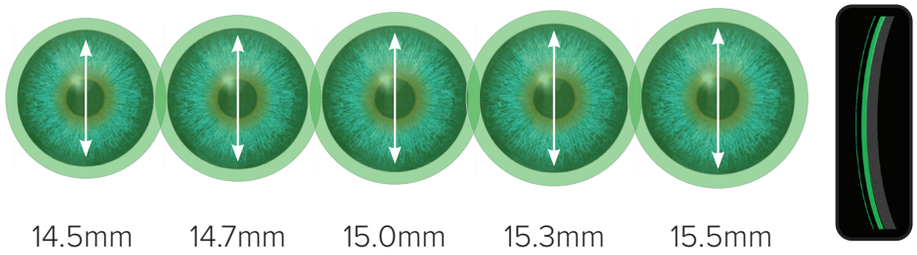
- Ensure the lens can move freely on the eye
- Place the DMV lens remover on the bottom portion of the lens and gently pull up and out
- Rinse the lens thoroughly and place in the case with fresh solutions for overnight storage

14.8

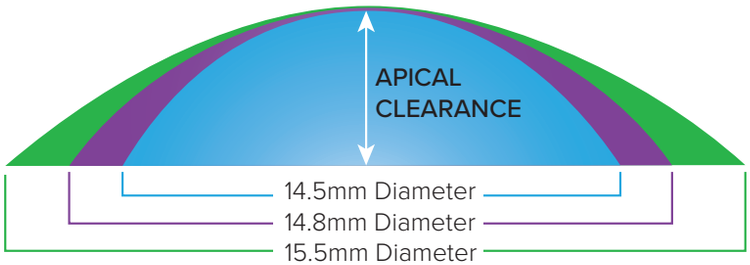
# Step 8
## Flexing the Diameter

**“Flexing the Diameter” The ICD FLEXFIT 14.8mm design**

- The ICD FLEXFIT 14.8mm design can be “flexed” in diameter
- The diameter can **range** (from the standard 14.8mm) **down to** 14.5mm and **up to** 15.5mm ***while maintaining the desired central clearance***




Changes in diameter can be made and the Auto-FLEX feature will maintain Apical Clearance




**Indications for “Flexing” the diameter**

- Fitting inside or vaulting pingueculae
- Filtering blebs
- Small apertures/Deep set eyes
- Application and removal challenges
- Larger diameters for Ocular Surface Disease

# Step 9

**Specifications required for ordering**

- Sagittal Depth of the ICD FLEXFIT diagnostic lens
- Diagnostic lens power
- Spherical over-refraction
- Flex 3 Option (if required)
- Any modifications to PCCZ, LCZ, SLZ

** If you require consultation to optimize the fit, make sure that you measure and note the apical clearance of your selected diagnostic lens.*



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