FIRST CHOICE LENS

USING TANGENTIAL TOPOGRAPHY

KERA SOFT® THIN

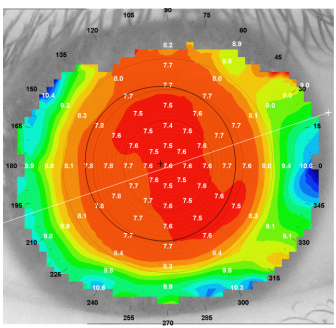
ULTRA-THIN SPECIALIST CONTACT LENS FOR KERATOCONUS AND IRREGULAR CORNEAS

SETTING UP THE TANGENTIAL MAP FOR FIRST CHOICE LENS

WHY USE A TANGENTIAL MAP?

Tangential maps give better information about corneal shape than Axial (Sagittal) maps, especially in the area of the peripheral cornea.

For this reason, the **First Choice Lens Calculation** will not work well with Axial maps. Below is an example of a Tangential map for a normal eye.



COMPENSATION FACTORS (CF)

These are numerical values within the calculation depending on the Central Sim K Readings of the cornea.

Use CF of 1.30 if **both** Central Sim Ks are under 7.00.
Use CF of 0.80 if **one or both** Central Sim Ks are equal to or over 7.00.

CHOOSING THE TANGENTIAL OPTION

Most machines use a drop-down box from which you can choose the 'Tangential' option (sometimes known as 'Instantaneous'). It is best if you use curvature, in mm, rather than power in Dioptres.

ABSOLUTE VS NORMALISED

Topography maps have the option to choose the steps between colors. Maps with fixed steps, usually 1.50DS apart, are called 'Absolute' and are used so that maps taken from different patients can be compared, like for like.

Normalized maps distribute the colors evenly across all curvatures for any given cornea. For an irregular cornea, this will generally give much better detail than an Absolute map and makes it easier to estimate the curvature at any given point.

POLAR RINGS AND NUMERICAL VALUES

Finally, set the map to show polar grid, so that you can identify the 5mm ring, and ensure it shows numerical values.

FULLY SET UP TANGENTIAL MAP

- Tangential Curvature map in mm
- Normalized
- Polar grid
- Numerical values

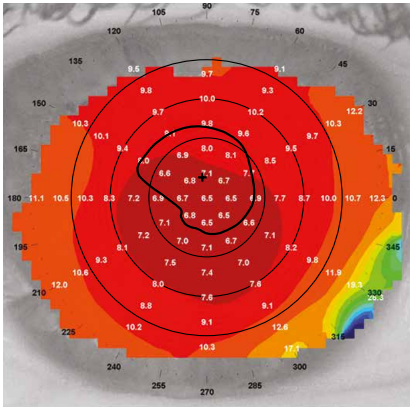
CENTRAL CONES

For these cases, we use the **Flat** Central Sim K and the **Steepest** K Reading on the 5mm ring.

$$\text{Base Curve} = \frac{\text{Average (Flat Central Sim K + Steep 5mm ring Sim K)} + \text{CF}}{2}$$

LOW/OFFSET CONES & PMD

$$\text{Base Curve} = \frac{\text{Average (Ave of Sim K + Ave K on 5mm ring)} + \text{CF}}{2}$$

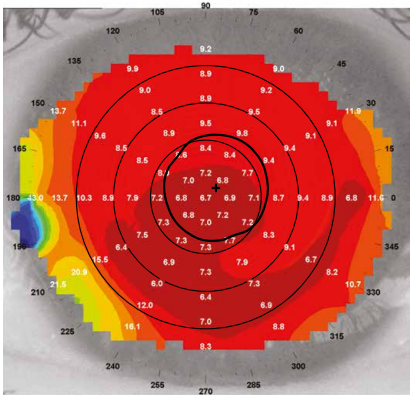


EXAMPLE 1 – USE CENTRAL CONE RULE

Central Sim Ks 6.99/6.43 **use Flat Sim K 6.99**
Take Steep Sim K on 5mm ring = 7.80
Average = 6.99+7.80/2 = 7.40
Add 1.30 (both Central Sim Ks under 7.00)
Base Curve = 8.70
Actual Base Curve worn by patient 8.60

WHY DO WE USE THIS RULE?

- Cornea is reasonably symmetrical around the central point on the 7mm rings.
- The steepest area is mainly in the centre.



EXAMPLE 2 – USE LOW/OFFSET CONE RULE

Central Sim Ks 7.57/6.74
Average = 7.16
On 5mm ring. **Flattest** Sim K = 9.90. **Steepest** Sim K = 6.20
Average = 8.05
Average of these two values = (7.16 + 8.05) /2 = 7.61
Add 0.80 (One of Central Ks is 7.00 or over)
Base Curve = 8.41
Actual Base Curve worn by patient 8.40

WHY DO WE USE THIS RULE?

- Cornea is **not** symmetrical around the central point on the 7mm rings.
- Although there is a central steep area, there is also a significant steeper area between the 5mm and 7mm rings inferiorly.

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