

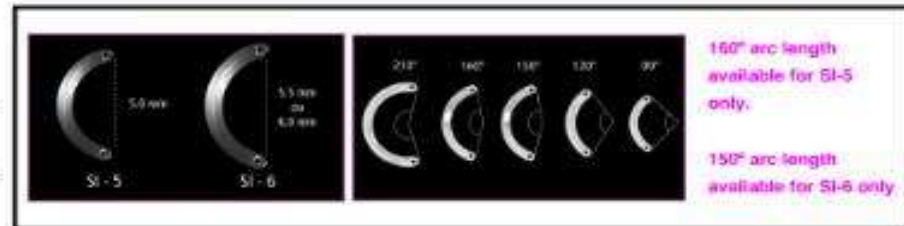
Keraring Calculation Guidelines 2009 (cont'd)



Step 9: On the nomogram table, find the quadrant that intersects the sphere and cylinder values obtained according to the treatment strategy selected. The nomogram describes each Keraring segment by XXX / YYY, whereas XXX is the proposed segment arc length in degrees and YYY is the segment thickness in microns.

Step 10: All nomograms are written for Keraring model SI-5 (5mm optical zone). Implantation of Keraring model SI-6 (6mm optical zone) may be considered in the following cases:

- ▽ BSCVA ≥ 0.7 AND mesopic pupil diameter > 5 mm.
- ▽ BSCVA ≥ 0.6 AND cylinder value is ≤ 5 D.
- ▽ Corneal pachymetry at 5.0 mm is insufficient according to the nomogram's Safety Limits Table AND cylinder is ≤ 5 D.
- ▽ When PRK or Phakic IOL implantation is planned as a second procedure AND cylinder is ≤ 5 D.

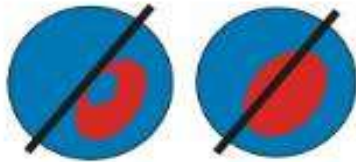


Note: To use Keraring model SI-6 add 50 μ m to the implant thickness given in the nomogram (up to 300 μ m). If arc length given in the nomogram is 160 $^\circ$, substitute the arc length for 150 $^\circ$.

When the nomogram suggests 2 segments, the one written on the superior line should be implanted on the flatter side, where the ectatic area is smaller (less or no red), and the segment described on the inferior line should be implanted on the steeper side (Example 1). When the nomogram suggests 1 segment only, it should be implanted on the steeper side, where the ectatic area is larger (Examples 2 and 3). For Keraring position according to comatic aberration, do as in Example 4

<p>Example 1</p> <p>160$^\circ$ / 150μm 100$^\circ$ / 300μm</p> <p>100$^\circ$ / 300μm</p>	<p>Example 2</p> <p>100$^\circ$ / 300μm</p> <p>100$^\circ$ / 300μm</p>	<p>Example 3</p> <p>210$^\circ$ / 150μm</p> <p>210$^\circ$ / 150μm</p>	<p>Example 4</p> <p>210$^\circ$ / 150μm</p> <p>210$^\circ$ / 150μm</p>	<p>Keraring Calculation Helpdesk</p> <p>If you need assistance with Keraring calculations or indications for specific patients, please contact the Keraring Helpdesk through your local distributor or email us at:</p> <p>keraring@mediphacos.com</p>
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Nomogram A

Corneal asymmetry types 1 and 2

Please read implant calculation guidelines before using



Minus Cylinder Diopters	≥ -8	90/200	90/200	90/200	90/200	90/200	90/200	90/200	90/200	90/250	90/250	90/250	90/250	
		160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/350	160/350	160/350	
	-7	90/200	90/200	90/200	90/200	90/200	90/200	90/200	90/200	90/200	90/200	90/200	90/200	
		160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/350	160/350	160/350	
	-6	90/150	90/150	90/150	90/150	90/150	90/150	90/150	90/150	90/150	90/200	90/150	90/150	
		160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/350	160/350	
	-5								90/150	90/150	90/150	90/150	120/200	120/200
		160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/300	160/350	160/350	
	-4								120/150	120/150	120/150	120/250	120/250	
		160/250	160/250	160/250	160/250	160/250	160/250	160/300	160/300	160/300	160/300	160/350	160/350	
	-3													
		160/200	160/200	160/200	160/200	160/200	210/200	210/200	210/250	210/250	210/300	210/300	210/300	
	-2									160/150	160/200	160/200	160/250	
	160/150	160/150	160/150	160/150	160/150	210/150	210/200	210/200	160/250	160/300	160/300	150/350		
-1									160/150	160/200	160/250	160/250	160/300	
	160/150	160/150	160/150	160/150	160/150	210/150	210/200	160/200	160/250	160/300	160/300	160/350		
	+3	+2	+1	Plano	-1	-2	-3	-4	-5	-6	-7	≥ -8		
	Manifest Sphere Diopters													

Keraring Calculation Helpdesk

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keraring@mediphacos.com

Corneal Pachymetry Safety Limits Reference Table

Proposed Segment Thickness	150µm	200µm	250µm	300µm	350µm
Minimum Corneal Thickness Required at the implantation (axial area)	250µm	335µm	420µm	500µm	580µm

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Nomogram C

Corneal asymmetry type 4

Please read implant calculation guidelines before using



KERARING

Intrastromal Corneal Ring Segments

Minus Cylinder Diopters	≥ -8	120/250	120/250	120/250	120/250	120/300	160/250	160/300	160/300	160/300	160/350	160/350	160/350
		120/250	120/250	120/250	120/250	120/300	160/250	160/300	160/300	160/300	160/350	160/350	160/350
	-7	120/250	120/250	120/250	120/250	120/300	160/250	160/300	160/300	160/300	160/350	160/350	160/350
		120/250	120/250	120/250	120/250	120/300	160/250	160/300	160/300	160/300	160/350	160/350	160/350
	-6	90/300	90/300	90/300	120/250	120/250	160/250	160/300	160/300	160/300	160/300	160/350	160/350
		90/300	90/300	90/300	120/250	120/250	160/250	160/300	160/300	160/300	160/300	160/350	160/350
	-5	90/300	90/300	90/300	120/250	120/250	160/250	160/250	160/300	160/300	160/300	160/350	160/350
		90/300	90/300	90/300	120/250	120/250	160/250	160/250	160/300	160/300	160/300	160/350	160/350
	-4	90/250	90/250	90/250	120/200	120/200	160/200	160/250	160/250	160/300	160/300	160/350	160/350
		90/250	90/250	90/250	120/200	120/200	160/200	160/250	160/250	160/300	160/300	160/350	160/350
	-3	90/200	90/200	90/200	120/200	120/200	160/200	160/200	160/250	160/250	160/300	160/350	160/350
		90/200	90/200	90/200	120/200	120/200	160/200	160/200	160/250	160/250	160/300	160/350	160/350
	-2	90/150	90/150	90/150	120/150	120/150	160/150	160/200	160/200	160/250	160/250	160/300	160/300
	90/150	90/150	90/150	120/150	120/150	160/150	160/200	160/200	160/250	160/250	160/300	160/300	
-1	90/150	90/150	90/150	120/150	120/150	160/150	160/150	160/200	160/250	160/250	160/300	160/300	
	90/150	90/150	90/150	120/150	120/150	160/150	160/150	160/200	160/250	160/250	160/300	160/300	
	+3	+2	+1	Plano	-1	-2	-3	-4	-5	-6	-7	≥ -8	
	Manifest Sphere Diopters												

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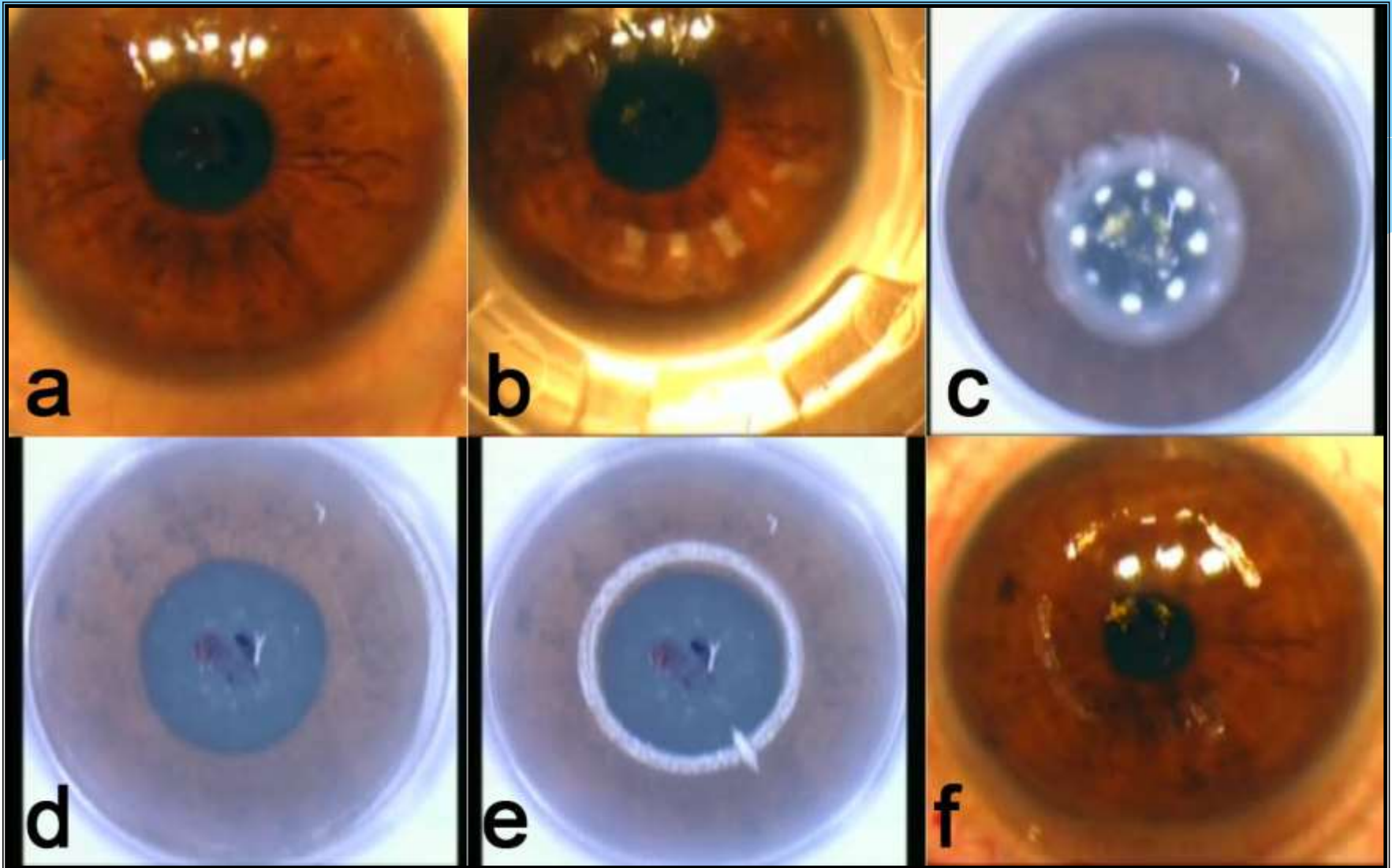
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Corneal Pachymetry Safety Limits Reference Table

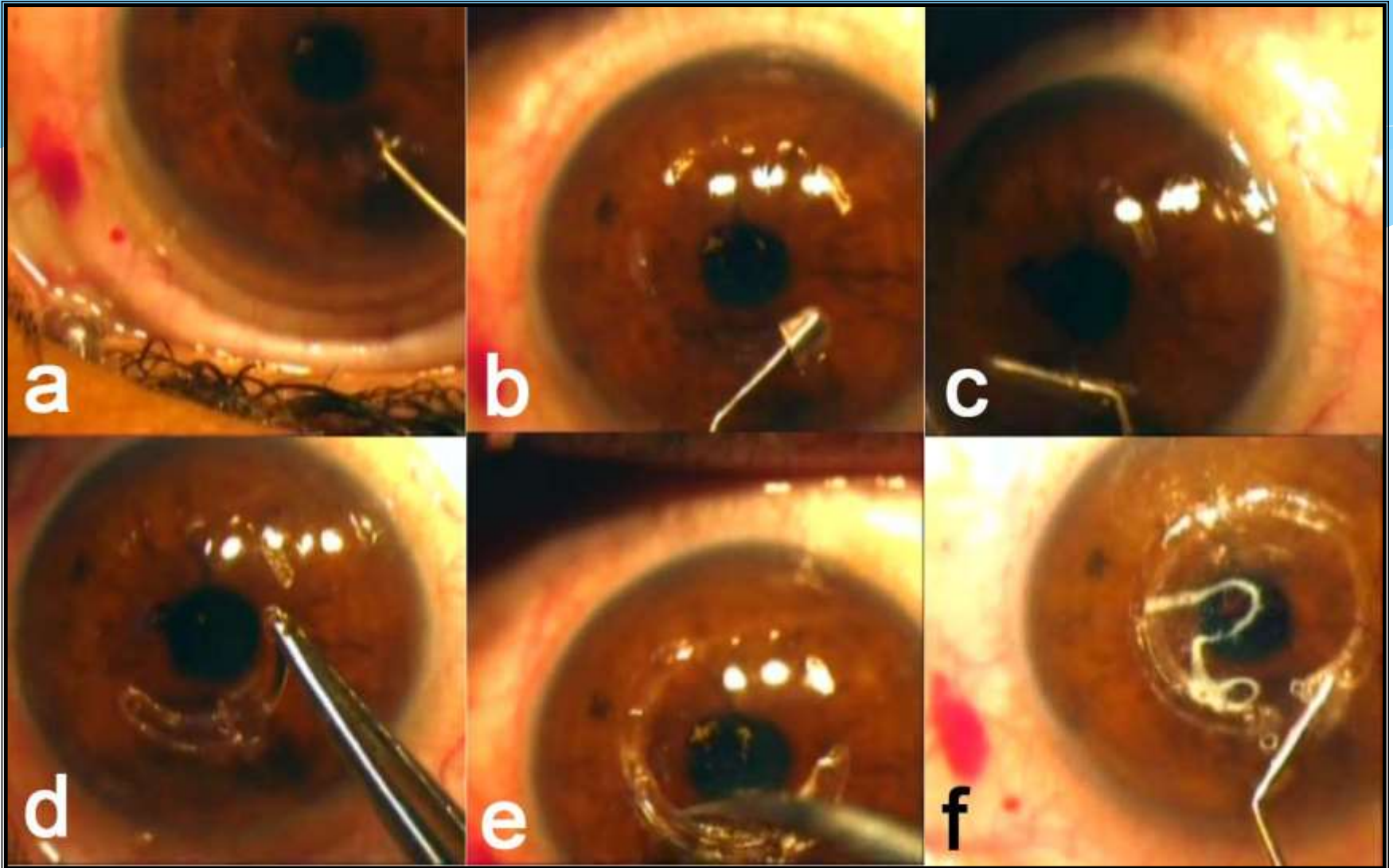
Proposed Segment Thickness	150µm	200µm	250µm	300µm	350µm
Minimum Corneal Thickness Required at the implantation tunnel area	250µm	335µm	420µm	500µm	580µm

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Tunnel creation by Femtosecond laser



Kerarrings Ring implantation



Pre and post Kerarings Pentacam

