ROSE K

ROSE K2™
ROSE K2 NC™
ROSE K2 PG™
ROSE K2 IC™

Practitioner's Fitting Guide

Keratoconus - Nipple Cone - Post Graft - Irregular Cornea

The ROSE K contact lens closely mimics the cone-like shape of the cornea for every stage of the condition, fitting better over the patient's eye and leading to optimum corneal health and visual acuity.

Menicon

The ROSE K2 Family of Designs

Applications

The ROSE K2 family of designs is a comprehensive system of RGP lenses for irregular corneas that includes:

ROSE K2	ROSE K2 NC	ROSE K2 PG	ROSE K2 IC
Primary Indication: • Oval keratoconus **Secondary Indication:** • Early nipple cones	**Primary Indication:** • Nipple cones **Secondary Indication:** • Advanced oval cones	**Primary Indication:** • Post Graft corneas **Secondary Indication:** • Decentered large oval cones • Any post corneal surgery, e.g. LASIK & PRK	**Primary Indication:** • Pellucid Marginal Degeneration • Keratoglobus • LASIK induced ectasia • Post Graft corneas **Secondary Indication:** • Highly decentered oval cones

Design

- Simple to use flexible edge lift system
- Aberration control aspheric optics providing outstanding visual acuity, reduced flare and glare and minimum lens mass
- Advanced fitting options including toric peripheral curves, Asymmetric Corneal Technology (ACT), front, back and bi-toric designs, and quadrant specific edge lifts
- Extensive diameter and base curve range
- Unique design that changes as the base curve steepens - fits most corneal shapes, sizes and stages of keratoconus

Parameter Range:

ROSE K2	ROSE K2 NC	ROSE K2 PG	ROSE K2 IC
Base curve • 4.20mm to 8.80mm **Diameter** • 7.50mm to 11.00mm **Power** • +/-40 D. **Edge lift** • Standard (0) • Standard flat (+1.0) • Standard steep (-0.5) More lifts are available in 0.5 increments ranging from -1.3 decreased (steep) to +3.0 increased (flat).	**Base curve** • 4.00mm to 8.10mm **Diameter** • 7.60mm to 10.00mm **Power** • -45.0 to +25.0 D **Edge lift** • Standard (0) • Standard flat (+1.0) • Standard steep (-0.5) • Double flat (+2.0) • Double steep (-1.0) More lifts are available in 0.5 increments ranging from -1.5 decreased (steep) to +4.0 increased (flat).	**Base curve** • 5.20mm to 11.60mm **Diameter** • 9.00mm to 12.50mm **Power** • +/-40 D. **Edge lift** • Standard (0) • Standard flat (+1.0) • Standard steep (-1.0) • Double flat (+2.0) • Double steep (-2.0) More lifts are available in 0.5 increments ranging from -3.0 decreased to +4.0 increased.	**Base curve** • 5.20mm to 12.00mm **Diameter** • 9.40mm to 12.00mm **Power** • +/-40 D. **Edge lift** • Standard (0) • Standard flat (+1.0) • Standard steep (-1.0) • Double flat (+2.0) • Double steep (-2.0) More lifts are available in 0.5 increments ranging from -3.0 decreased to +4.0 increased.

Fitting Sets:

ROSE K2	ROSE K2 NC	ROSE K2 PG	ROSE K2 IC
26 lenses from 5.10 to 7.60mm in a variable diameter from 8.50 to 9.20mm, with variable power to approximate the final lens power.	25 lenses from 4.60 to 7.40mm in variable diameter from 8.10 to 8.90mm with variable power to approximate the final lens power.	22 lenses from 6.00 to 9.00mm in a 10.40mm diameter, with variable power to approximate the final lens power.	18 lenses from 6.00 to 8.40mm in an 11.20mm or 11.40mm diameter, with variable power to approximate the final lens power.

The ROSE K2 Fitting Procedure

Fitting Overview

All ROSE K2 designs follow the same simple, systematic five step fitting process:

Step 1: Base Curve Selection
Select the base curve that yields a central fit appropriate for the design (see Fitting Chart on page 4).

Step 2: Peripheral Fit
Adjust the periphery to yield an even fluorescein band 0.6mm to 0.8mm in width.

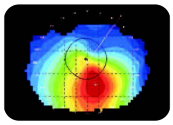
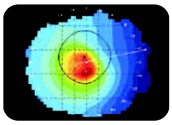
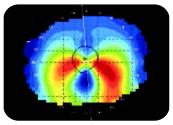
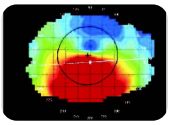
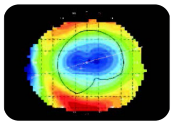
Step 3: Diameter
Select the minimum diameter that yields good location and movement.

Step 4: Location
Adjust parameters such that the lens hangs off the top lid and is well clear of the lower limbus.

Step 5: Movement
Adjust parameters to achieve movement on blink of 1.0mm to 1.5mm.

Before you begin:

- The use of diagnostic lenses is the only way to properly assess the correct fit and final lens power.
- Topical corneal anesthetics can be used to help reduce excessive tearing and allow for more accurate fluorescein assessments in new fits.
- When selecting the initial base curve, keep in mind that the keratometer only measures the central 3mm along the line of sight, so your first trial lens may not yield the best fit.
- Determine the appropriate ROSE K2 design for the corneal condition to be treated. The images below represent typical cones and irregular corneas encountered in a practice, along with the recommended ROSE K2 lens design for optimal fit:

Oval cone	Nipple cone	Pellucid Marginal Degeneration	Keratoglobus	LASIK Induced Ectasia
				
ROSE K2 ROSE K2 PG	ROSE K2 NC	ROSE K2 IC ROSE K2 PG	ROSE K2 IC ROSE K2 PG	ROSE K2 IC ROSE K2 PG

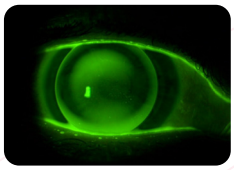
- If using a corneal topographer, select the first trial lens based on the 3.0mm sim K's.

Fitting Chart

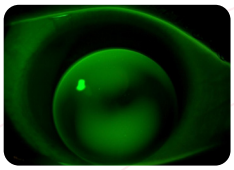
	ROSE K2 Oval Keratoconus	ROSE K2 NC Nipple Cones	ROSE K2 PG Post Graft Corneas Post Surgical Corneas	ROSE K2 IC Pellucid Marginal Degeneration, Keratoglobus, LASIK induced Ectasia and Post Graft Corneas
Step 1: BASE CURVE SELECTION **Ignore peripheral fit at this stage.** **Evaluate central fit immediately after blink, when lens is centered.**	**Mean K flatter than 7.0mm:** Select first trial lens 0.2mm steeper than mean K reading. **Mean K between 6.0 - 7.0mm:** Select first trial lens equal to mean K reading. **Mean K steeper than 6.0mm:** Select first trial lens 0.4mm flatter than mean K reading (less predictable). **Objective:** Light, feather touch at apex of cone. (See fluorescein images section)	**Mean K flatter than 6.0mm:** Select first trial lens 0.2mm steeper than mean K. **Mean K between 5.1 - 6.0mm:** Select first trial lens equal to mean K. **Mean K steeper than 5.0mm:** Select first trial lens 0.3mm flatter than mean K reading. **Objective:** Similar or slightly greater central touch than conventional ROSE K2 design. (See fluorescein images section)	Select first trial lens 0.3mm steeper than mean K. **Objective:** Central pooling of 0.2 to 0.3mm in early, flatter grafts; alignment to 0.1mm flatter in more mature grafts. (See fluorescein images section)	**PMD and Globus:** Select first trial lens 0.3mm flatter than steepest corneal meridian. **Post LASIK and GRAFT:** refer to ROSE K2 PG section. **Objective:** **PMD and Globus:** Light feather touch. **Post LASIK:** Central pooling of 0.2 to 0.3mm. **Post Graft:** refer to ROSE K2 PG section. (See fluorescein images section)
Step 2: PERIPHERAL FIT	Once optimum central fit is achieved, assess edge lift. Look for an even fluorescein band of 0.6mm to 0.8mm in width. Order increased (flat) or decreased (steep) edge lift accordingly. For asymmetric edge lift where the lift is excessive in one meridian and insufficient in the other meridian, consider toric peripheral curves (TP design). For significant edge stand off/lift off in one quadrant only, consider ACT. Quadrant specific edge lifts are also available where a different lift can be ordered in each quadrant.			
Step 3: DIAMETER	**Objective:** Minimum diameter that yields good location and movement. • Lens should hang off top lid and be well clear of lower limbus. • Movement on blink should be 1.0 to 1.5mm. Smaller diameters required for central cones and larger diameters for decentered cones. Larger diameters are often required for early cones and will also tend to make the lens ride higher.	**Objective:** Minimum diameter that yields good location and movement. • Lens should hang off top lid and be well clear of lower limbus. • Movement on blink should be 1.0 to 1.5mm. Small, steep nipple cones often require a smaller diameter, approximately 8.3mm on average. Flatter nipple cones go larger on diameter, steeper nipple cones go smaller on diameter.	**Objective:** Minimum diameter that yields good location and movement. • Lens should show good attachment under the top lid and be well clear of the lower limbus. • Movement on blink should be 1.0 to 1.5mm. Standard diameter 10.4mm. Increasing diameter will help lens location/centration. Make sure lens is not impinging on upper sclera.	**Objective:** Minimum diameter that yields good location and movement. • Lens should show good attachment under the top lid and be well clear of the lower limbus. • Movement on blink should be 1.0 to 1.5mm. Standard diameter 11.2mm. Increasing diameter will help lens location/centration. Make sure lens is not impinging on upper sclera.
Step 4: LOCATION	For ROSE K2 & ROSE K2 NC, lens should hang off top lid and be well clear of lower limbus. ROSE K2 PG & IC should ride higher, exhibiting lid attachment. To Improve Location: • Lens resting too low (inferior): The lens can be made to sit higher by flattening BC, increasing edge lift and/or increasing diameter. • Lens resting too high (superior): The lens can be made to sit lower by steepening BC, decreasing edge lift and/or decreasing diameter.			
Step 5: MOVEMENT	Movement on blink should be 1.0 to 1.5mm. • To increase movement, increase edge lift, decrease diameter and/or flatten base curve. • To decrease movement, decrease edge lift, increase diameter and/or steepen base curve.			
ASSESS POWER LAST	Perform over-refraction in well-lit room. Over-refract using ±1.00D steps initially and refine with ±0.50 and ±0.25D steps. **ROSE K2 NC**: Allow trial lens to settle for a minimum of 10 minutes before over-refracting. For final power assessment, ensure testing room lights are on and push plus to blur. It is common to over-minus these patients. **Residual Astigmatism (R.A.)** It is common to leave low amounts of R.A. uncorrected, or to compensate spherically (see compensation advice on right). It is rare to see R.A. amounts over this level but when it is present, toric lenses (front, back or bi-toric) are usually needed.			**Spherical compensation of R.A.** R.A. -0.25 to -0.50: add -0.25 D R.A. -0.75 to -1.00: add -0.50 D

Fluorescein Images

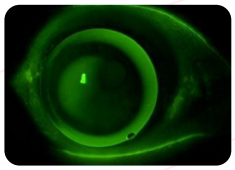
ROSE K2



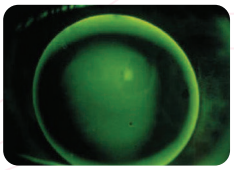
Optimum fit immediately after blink



Optimum fit a few seconds after blink. Don't judge fit in this downward location

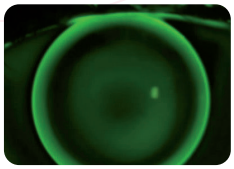


Good fit centrally - loose periphery

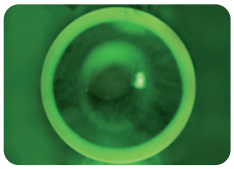


Steep centrally - good fit periphery

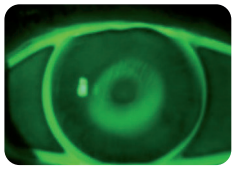
ROSE K2 NC



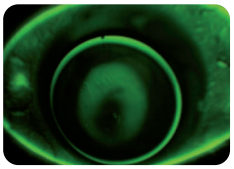
Nipple Cone.
Optimum fit



Nipple Cone.
Excessive edge lift

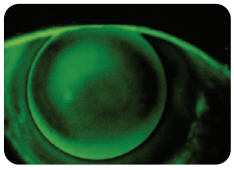


Nipple Cone.
Tight edge lift

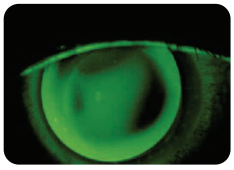


Nipple cone.
Tight edge lift, low location

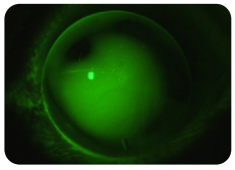
ROSE K2 PG



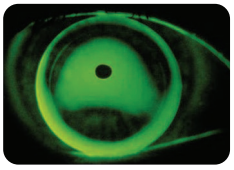
Optimum fit



Early graft - good location and central fit, excessive edge lift

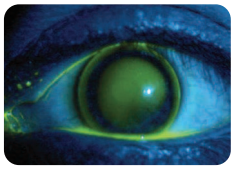


Optimum central fit, tight periphery



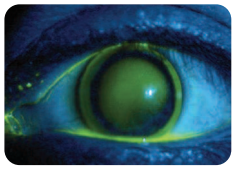
Oblate Graft - steep centrally, loose periphery

ROSE K2 IC

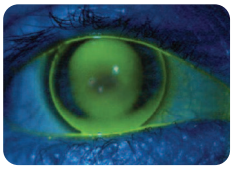


11.4mm diameter lens on PMD. Optimum apical touch and edge lift

11.4mm diameter lens on PMD. Excessive apical bearing, insufficient edge lift



11.4mm diameter lens on PMD. Optimum apical touch, excessive edge lift



11.4mm diameter lens on Nipple Cone. Optimum apical touch and edge lift except at 6 o'clock where edge lift is excessive. ACT grade #1 recommended

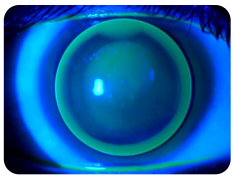
Flexible Edge Lift System

The peripheral fit is the single most important fitting factor for a successful, comfortable GP fit. Rather than a complicated series of radii and diameters, all ROSE K2 lenses use a simple value referred to as edge lift to determine the optimal peripheral configuration. After assessment of the edge lift pattern of the trial lens, a comprehensive range of edge lifts are offered (see figures below) to provide the optimum amount of edge lift clearance. The final lens is automatically compensated (base curve and power, no calculations are required), so the change in edge lift (which alters the sagittal height) does not affect the central fit!

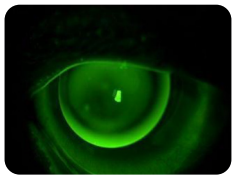
With **ROSE K2 lenses**, 85% of all lenses dispensed use either the standard edge lift, standard flat (increased) or standard steep (decreased) edge lift to achieve the desired peripheral fit. However, other edge lift values can be specified in 0.5 increments ranging from -1.3 decreased (steep) to +3.0 increased (flat) (**see Illustration D1, below**).

ROSE K2 NC presents a very rapid peripheral flattening with also a high percentage of all lenses dispensed using either the standard edge lift, standard flat (increased) or standard steep (decreased) for optimum peripheral fit. Other edge lift values are available in 0.5 increments ranging from -1.5 decreased (steep) to +4.0 increased (flat) (**see Illustration D2, below**).

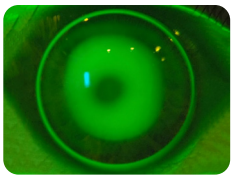
With **ROSE K2 IC** and **ROSE K2 PG** lenses, the flexible edge lift system is available in either the standard edge lift (0), standard flat /increased (+1.0), double flat (+2.0), standard steep/decreased (-1.0) or double steep (-2.0) for optimum peripheral fit. Other edge lift values are available in 0.5 increments ranging from -3.0 decreased to +4.0 increased (**see Illustration D3, below**).



Optimal edge lift will give a fluorescein band of 0.5 to 0.7mm with no excessive lift or peripheral seal at any point.



When the fluorescein pattern indicates edge lift in excess of 0.5 to 0.7mm, a standard steep edge lift value is recommended.



When the fluorescein pattern indicates an edge lift less than 0.5 to 0.7mm, a standard flat edge lift value is recommended.

Illustration D1

ROSE K2
85% of all ROSE K2 lenses utilize either the standard, standard flat or standard steep edge lift values.

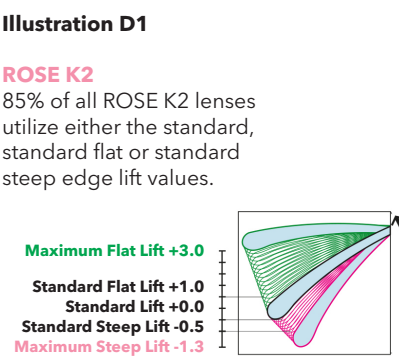


Illustration D3

ROSE K2 IC
ROSE K2 PG
Edge lifts from +4.0 to -3.0 are available to fit all of your patients.

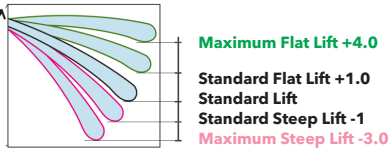
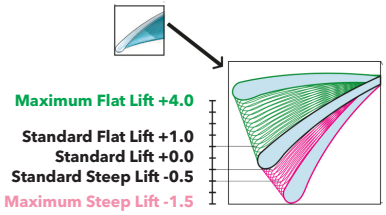


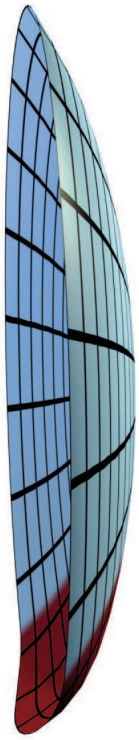
Illustration D2

ROSE K2 NC
85% of all ROSE K2 NC lenses utilize either the standard, standard flat or standard steep edge lift values.



ACT Asymmetric Corneal Technology

By nature, the keratoconic cornea is asymmetric, where the inferior quadrant is frequently significantly steeper than the superior portion, causing the GP lens to lift off at 6 o'clock **(see Illustration E)**. ROSE K2 lenses incorporating ACT are designed to accommodate this asymmetry (good edge fit at 3, 9 and 12 o'clock but lift at 6 o'clock). The inferior quadrant of the lens is steepened, providing a more accurate fit at 6 o'clock making the lens more comfortable and stable **(see Illustration F)**, and often providing superior vision. ACT is independent of the primary base curve and edge lift and can be added to any ROSE K design in up to 2 quadrants at any axis.



ACT is quadrant specific and allows the steepening of the inferior quadrant only

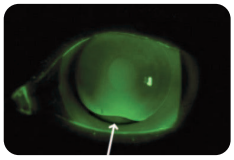


Illustration E: A spherical ROSE K2 lens (symmetric) fitted on this asymmetric keratoconic cornea fits well at 3, 9 and 12 o'clock but causes the lower edge to lift off at 6 o'clock.

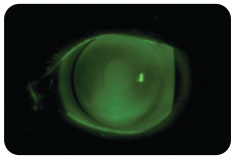
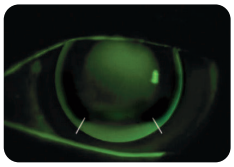
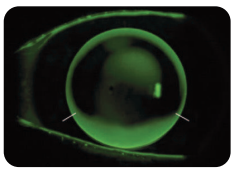


Illustration F: Incorporating ACT into the design improves the fit at 6 o'clock, making the lens more comfortable and stable and providing superior vision.

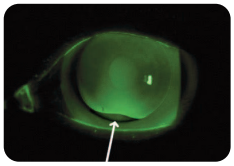
Availability



ACT GRADE #1 (0.7mm)
Slight edge stand off with pooling at or around 6 o'clock (between 5 and 7 o'clock).
Specify: ACT grade #1



ACT GRADE #2 (1.0mm)
Moderate edge stand off with pooling and possible bubble at or around 6 o'clock (between 4 and 8 o'clock). The tear meniscus may also start to break up on blinking. Specify: ACT grade #2



ACT GRADE #3 (1.3mm)
Significant edge stand off or lift off (tear meniscus breaks up) at around 6 o'clock.
Specify: ACT grade #3

Note: other grades of ACT are available (0.4mm to 1.5mm), please contact us for more information.

Toric Peripheral Curves

A toric periphery (TP) is where the optical zone is spherical and approximately the last 1mm of the peripheral curve is toric although this is variable dependent on the overall diameter of the lens. With Keratoconus, the tight areas, usually within 20 degrees of 180° (3 and 9 o'clock), will be eliminated with a TP design **(see Illustration G)**. In PMD there is often significant against-the-rule astigmatism making the lens tight at 12 and 6 o'clock and loose at 3 and 9 o'clock. A lens that is tight at 12 o'clock causes discomfort, so a TP design is often useful here.

The TP design is available on ROSE K2, ROSE K2 NC, ROSE K2 IC, ROSE K2 PG lenses and will greatly enhance lens fit, stability, comfort, vision and wearing time.

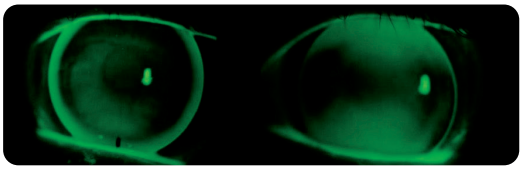
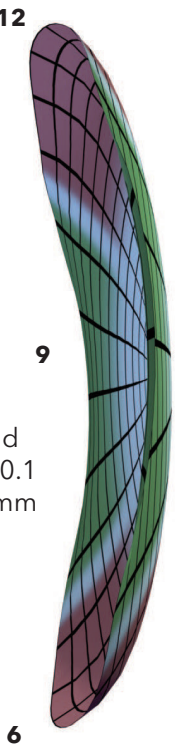


Illustration G: With ROSE K2 standard toric periphery

No toric periphery

Availability

The 3 and 9 o'clock meridians are flattened while the 6 and 12 o'clock meridians are steepened. A standard toric periphery will create a 0.8mm difference in meridians. Other values are available in 0.1 steps between 0.4 and 2.6mm for ROSE K2 and in 0.1 steps between 0.4 and 2.0mm for ROSE K2 NC, PG & IC designs.



ROSE K2 Fitting Tips

	Flatten BC	Steepen BC	Increase Diameter	Decrease Diameter	Increase Edge Lift	Decrease Edge Lift	Consider Toric
Lens riding low	✓		✓		✓		
Lens riding high		✓		✓		✓	
Apical Staining		✓					
3 & 9 o'clock staining				✓			✓
Superior limbal staining				✓			
Fluorescein edge band too wide						✓	
Fluorescein edge band too narrow					✓		
Ghosting or cloudy vision			✓				
Poor acuity	✓						
Bubbling and dimple veiling	✓			✓	✓		
Pooling at cone base	✓			✓	✓		
Discomfort						✓	
Early cones			✓			✓	
Advanced cones				✓	✓		

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