RayOne TRIFOCAL

Rayner

RayOne® Trifocal IOL

The preloaded platform that performs again and again

MADE IN UK

RayOne® Trifocal lens

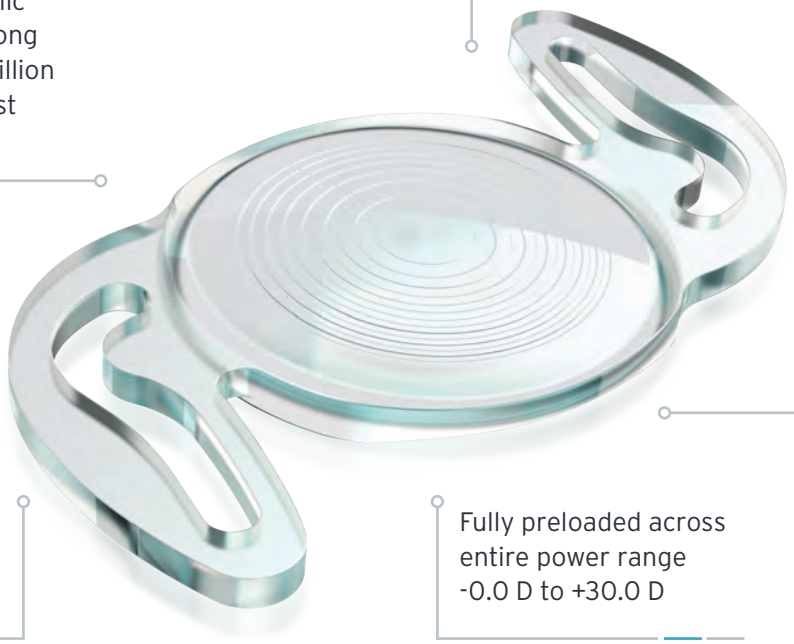
Designed to perform again and again, for more patients

RayOne® Trifocal is the newest member of the RayOne® family of preloaded IOLs, based on the well-known high performance Rayner platform that **performs again and again.**

Aberration-neutral aspheric optic for visual quality and acuity in all light conditions

Amon-Apple enhanced square edge for minimal PCO 1.7% at 24 months[3]

Biocompatible hydrophilic acrylic material with a long safety record. Over 5 million lenses sold since the first C-flex Aspheric in 2006



Zero glistenings

Based on proven haptic technology for excellent stability[1,2]

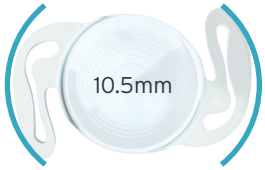
Fully preloaded across entire power range -0.0 D to +30.0 D

Proven haptic technology for excellent stability

Any rotation, tilt or decentration of a multifocal lens could affect patient outcomes and cause phototopic disturbances. Our anti-vaulting haptic technology gives proven rotational and centrational stability, plus excellent fixation in the capsular bag[1]:

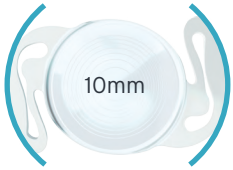
- **Superb centration** - Maximum offset of only 1.0 mm 3 months after surgery[2]
- **Excellent rotational and torsional stability** - 3.1° mean IOL rotation 3 months after surgery[2]

STAGE 1



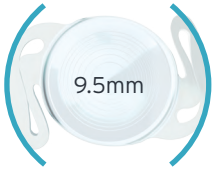
Outer haptics begin to take up the compression forces of post-operative capsule contraction

STAGE 2



Outer haptics engage the inner haptics

STAGE 3



Haptic tips gently meet the IOL optic and are effectively locked into position

RayOne® Trifocal injector

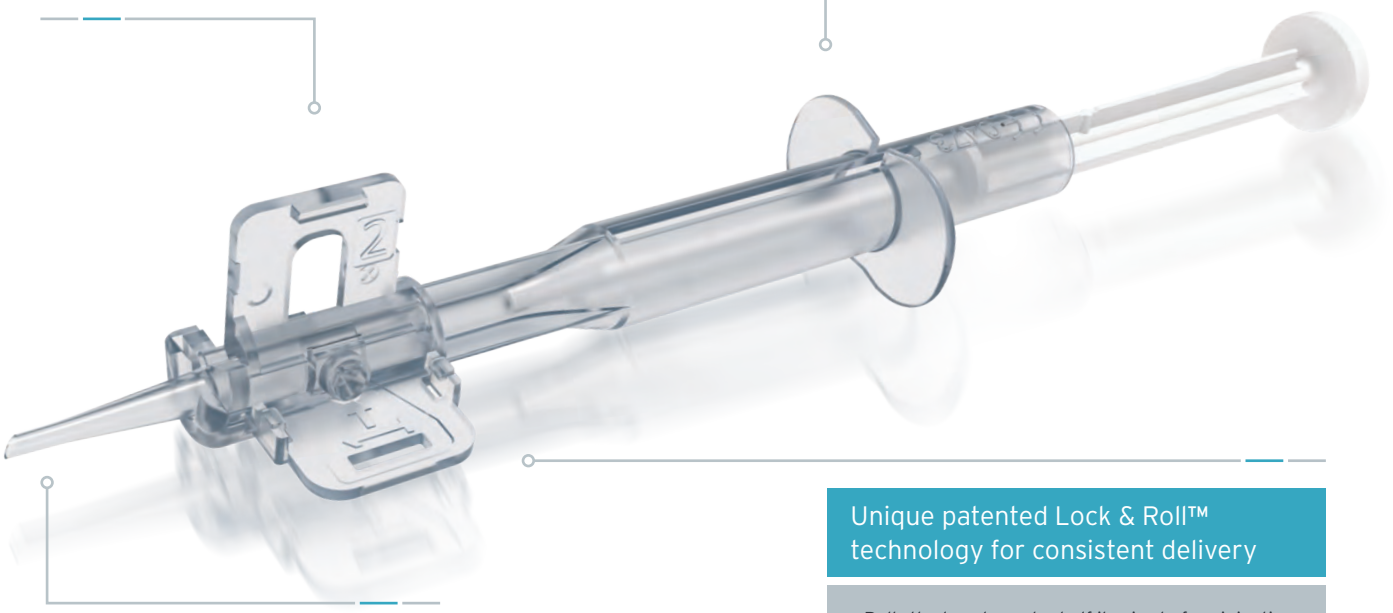
For predictable and efficient delivery, every time

True 2-step system

- Simple and intuitive
  - i. Minimal learning curve
  - ii. Minimises error
- Increase efficiencies
  - i. Designed for repeatability
  - ii. Reduces operating time
- **Step 1:** Insert OVD into cartridge via port
- **Step 2:** Lock cartridge ready for implantation

Single handed plunger with minimal force required

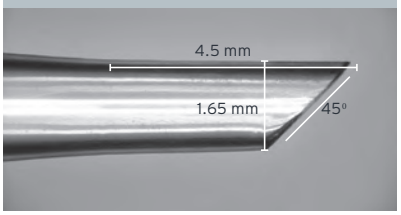
Ergonomic design for ease of handling



Sub 2.2 mm incision

1.65 mm RayOne® nozzle for sub 2.2 mm incision

- Smallest fully preloaded injector nozzle
  - i. Ease of insertion
  - ii. Enables true micro incision
- Parallel sided for minimal stretch
  - i. Sub 2.2 mm delivery
  - ii. Maintains incision architecture



Unique patented Lock & Roll™ technology for consistent delivery

- Rolls the lens to under half its size before injection
  - i. Consistent, smoother delivery
  - ii. Reduces insertion forces
- Fully enclosed cartridge with no lens handling
  - i. Reduces the risk of lens damage
  - ii. Minimises chance of contamination

Lock & Roll™ technology

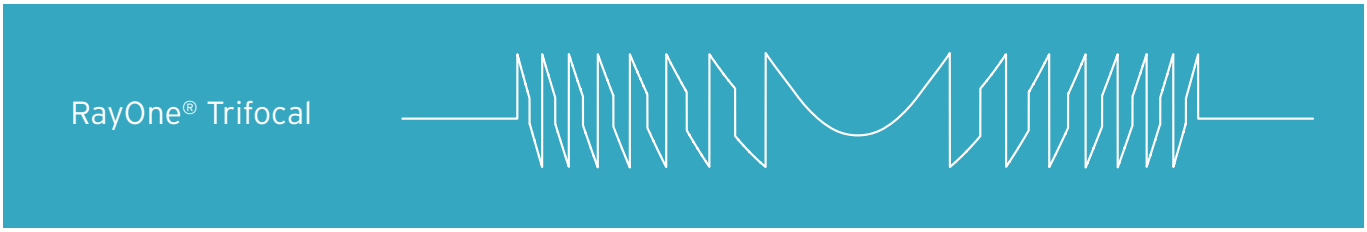
Consistently locked and rolled to under half its size in one simple action

References: 1. Claoué C. Clinical and Surgical Ophthalmology 2008; 26(6): 198-200. 2. Alberdi R et al. J Refract Surg. 2012; 28(10):696-700. 3. Mathew RG and Coombes AGA. Ophthalmic Surg Lasers Imaging. 2010 Nov-Dec; 41(6):651-5.

Optimised patented diffractive design

RayOne® Trifocal has a new patented diffractive profile that has been designed in partnership with a leading European technology institute. Over the last **four years Rayner has developed the most advanced optic in our history** and possibly the most advanced in the industry.

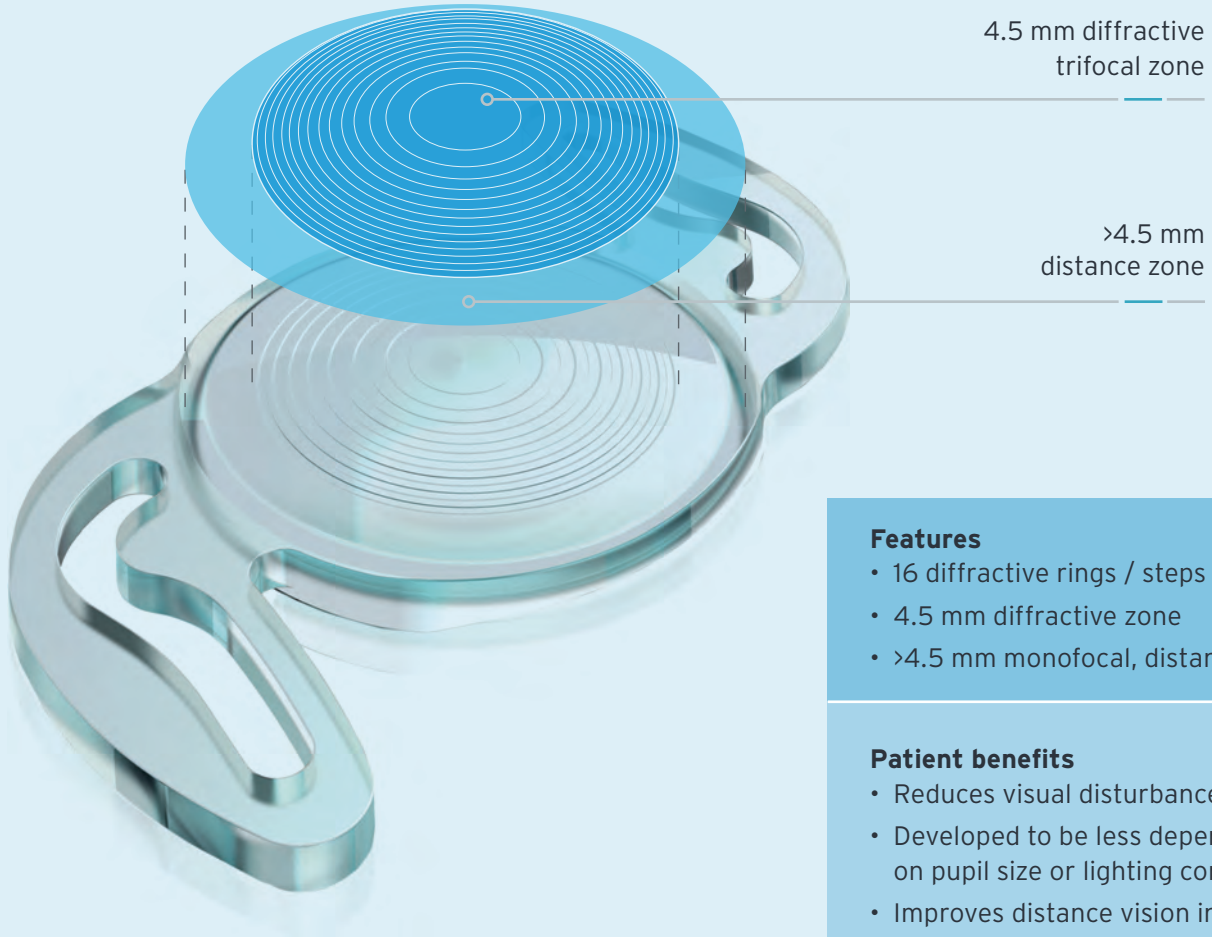
The diffractive profile is a construct of two profiles to form our patented design:



Graphical representations only of diffractive surface pattern

Improved visual outcomes designed for less pupil dependency

RayOne® Trifocal has fewer rings on the optic surface than many trifocal IOLs for **reduced potential visual disturbances and improved night vision.**



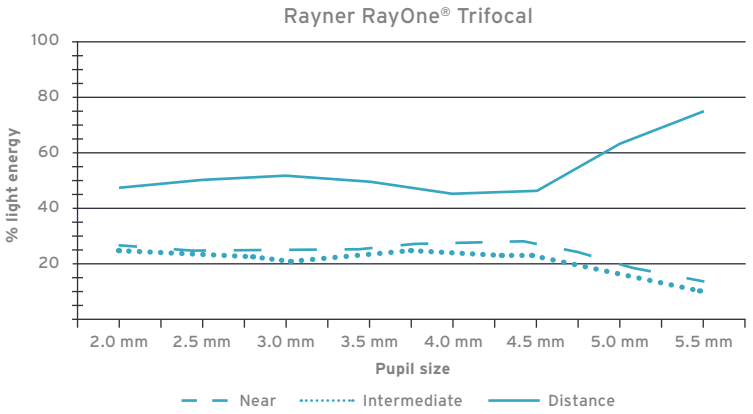
Features
- 16 diffractive rings / steps
- 4.5 mm diffractive zone
- >4.5 mm monofocal, distance

Patient benefits
- Reduces visual disturbances
- Developed to be less dependent on pupil size or lighting conditions
- Improves distance vision in mesopic condition

Exceptional light usage

Our patented diffractive step trifocal technology **reduces light loss to only 11%**

- 89% of light transmitted to the retina with a pupil of 3 mm
- Half the light allocated for distance
- Remaining light divided between near and intermediate vision
- Light Energy Split at 3.0 mm pupil
  - **52% Distance**
  - **22% Intermediate**
  - **26% Near**



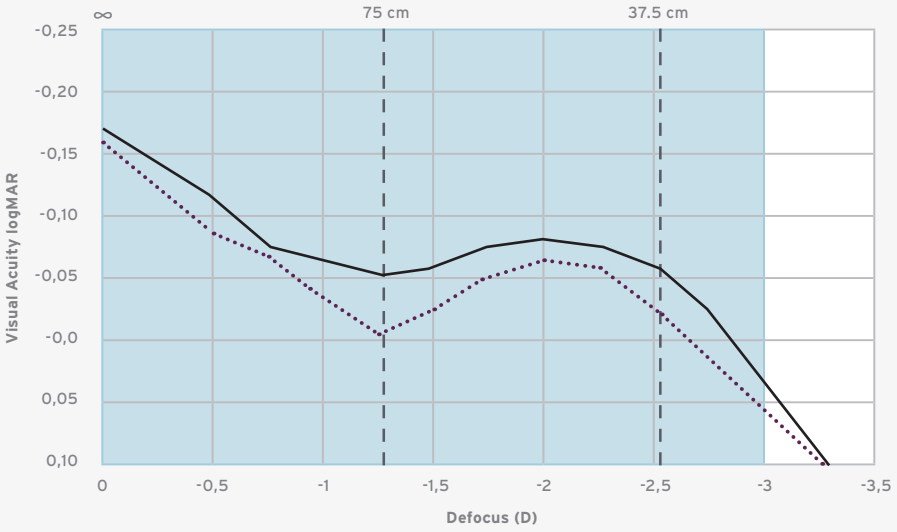
Comfortable transition from near to distance activities

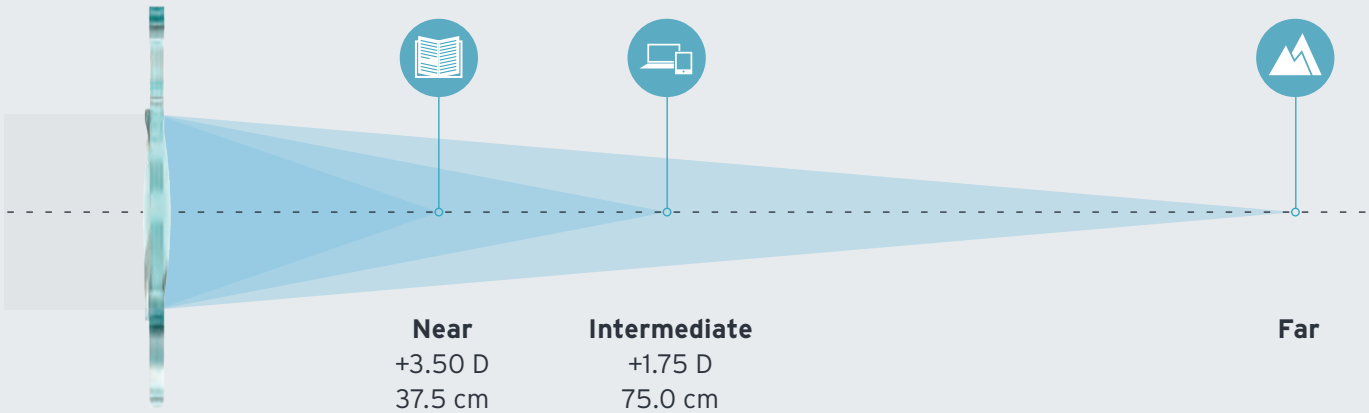
RayOne® Trifocal improves intermediate visual acuity enabling patients to feel **more comfortable transitioning from near to distance activities.**

RayOne® Trifocal is designed with:

+3.50 D near add
37.5 cm reading plane

+1.75 D intermediate add
75.0 cm reading plane

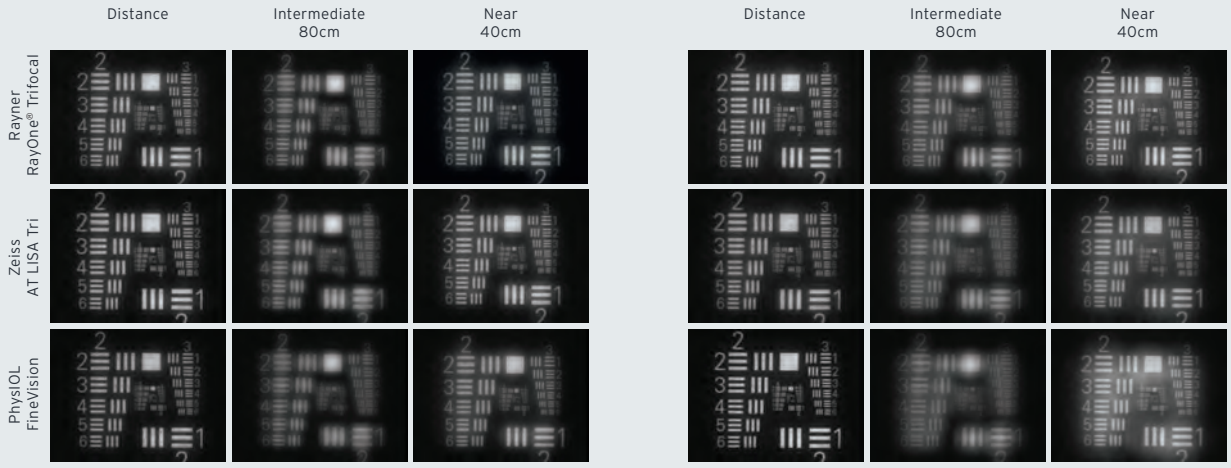




How does RayOne® Trifocal compare?

RayOne® Trifocal offers excellent performance across Near, Intermediate and Distance vision, and with the retained light energy through the diffractive profile providing excellent contrast sensitivity. In low light conditions when compared to other diffractive trifocal technologies the RayOne® Trifocal maintains its performance across the three foci points.

USAF 1951 target charts



3.0 mm Pupil Size

4.5 mm Pupil Size

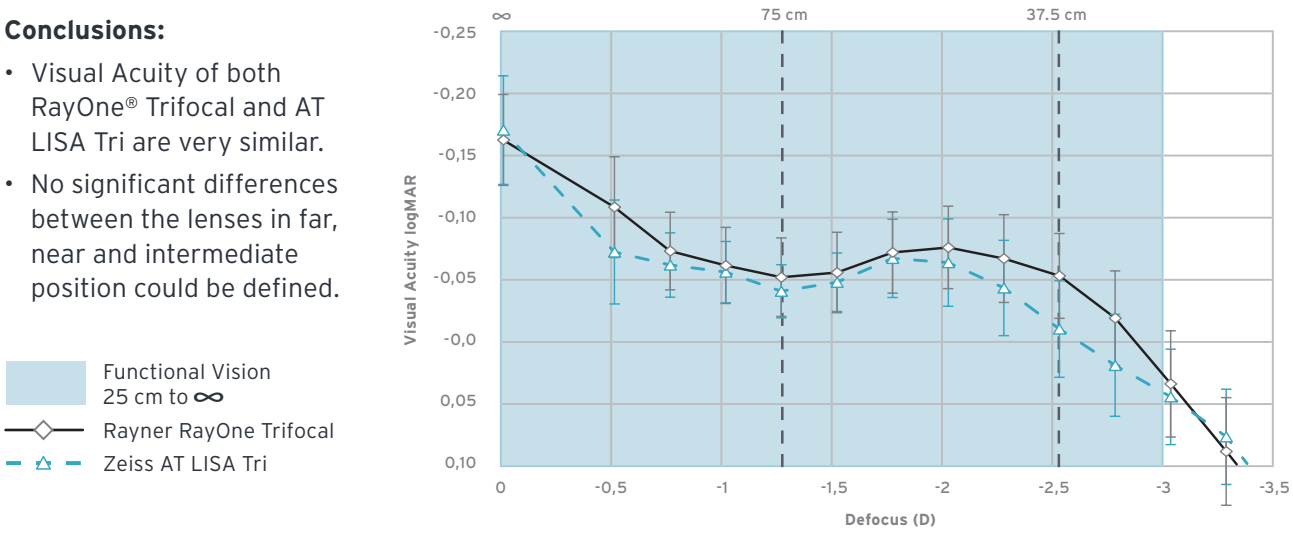
Rayner model eye bench simulator viewing USAF 1951 target charts. Monocular images that do not take into account the binocular sum that improves the overall view at all distances. A +20.0 D power IOL was used for all IOLs. All trademarks are property of their respective owners. Source: Rayner test data held on file.

Comfortable transition from near to distance

30 healthy test persons IOL simulator study. Designed as a randomised, observer and subject masked, crossover comparison study using an IOL simulator device.

Conclusions:

- Visual Acuity of both RayOne® Trifocal and AT LISA Tri are very similar.
- No significant differences between the lenses in far, near and intermediate position could be defined.



RayOne® Trifocal technical information

Model Name:	RayOne® Trifocal
Model Number:	RA0603F
Power Range:	0.0 D to +30.0 D (increments 0.5 D) Trifocal, diffractive, +3.5 D near add and +1.75 D intermediate add at the IOL plane

Delivery System	
Injector Type:	Single use, fully preloaded IOL injection system
Incision size:	1.65 mm nozzle for sub 2.2 mm incision
Bevel Angle:	45°
Lens Delivery:	Single handed plunger

Aspheric Trifocal IOL	
Material:	Single piece Rayacryl® hydrophilic acrylic
Water Content:	26% in equilibrium
UV Protection:	Benzophenone UV absorbing agent
UV Light Transmission:	UV absorption 10% cut-off is 380 nm
Refractive Index:	1.46
Overall Diameter:	12.50 mm
Optic Diameter:	6.00 mm
Optic Shape:	Biconvex (positive powers)
Asphericity:	Aberration-neutral technology
Optic Edge Design:	Amon-Apple 360° enhanced square edge
Haptic Angulation:	0°, uniplanar
Haptic Style:	Closed loop with anti-vaulting haptic (AVH) technology
Estimated A-constant for optical biometry SRK/T	118.6
Estimated A-constant for Contact Ultrasound	118.0

Please note that the constants indicated for all Rayner lenses are estimates and are for guidance purposes only. Surgeons must always expect to personalise their own constants based on initial patient outcomes, with further personalisation as the number of eyes increases.

RayOne® family

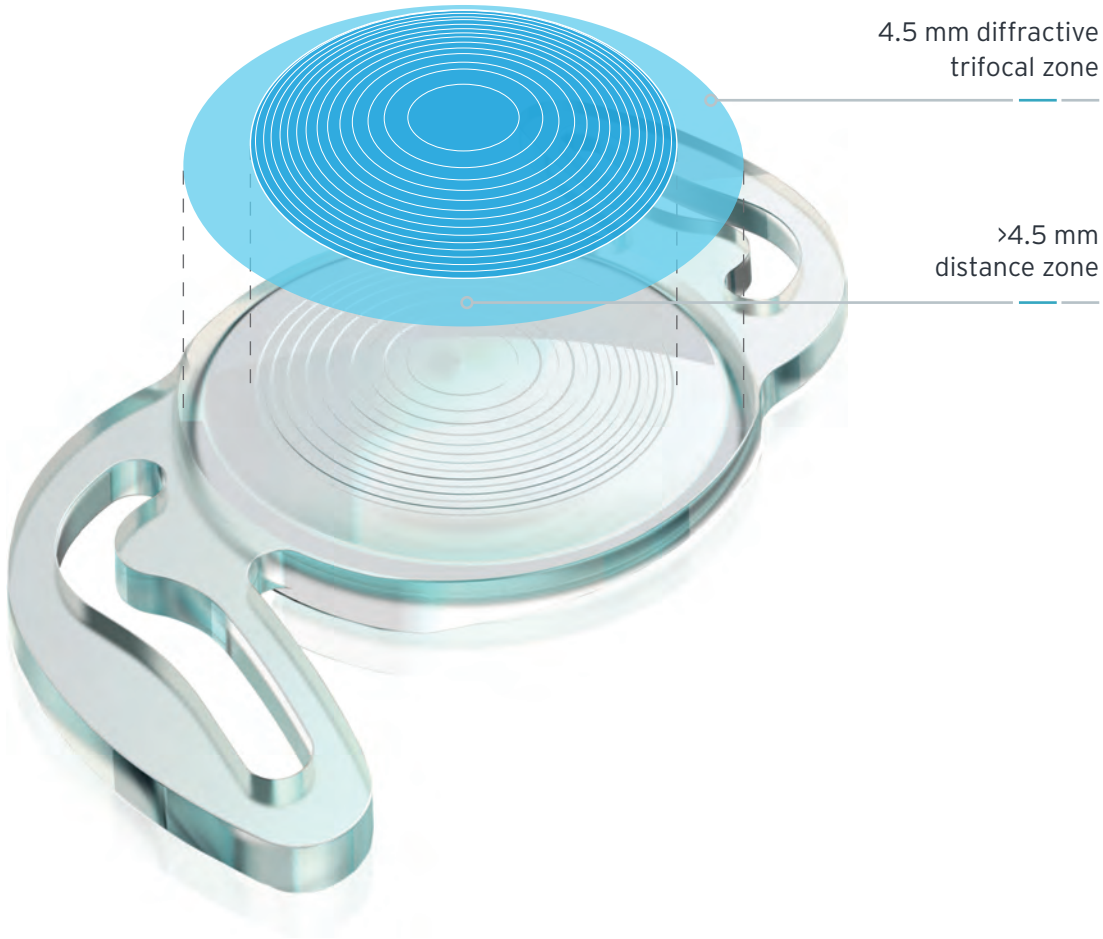
RayOne® Trifocal is the newest member of the RayOne® family of IOLs.

Based on the well-known, high performance Rayner platform that **performs again and again.**

RayOne® Trifocal for Presbyopia Correction

The preloaded platform that **performs again and again**

- Patented diffractive step trifocal technology
- Reduces light loss to only 11%
- Smooth transition from near to intermediate and distance vision
  - Light distribution: 52% Distance, 22% Intermediate, 26% near
- Proven closed loop haptic Rayner IOL platform
- Fully preloaded system with 1.65 mm nozzle



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Discover why RayOne® Trifocal is in a class of its own visit **rayner.com/rayone**