



# Sulcoflex® Trifocal Supplementary IOL

**When expectations and outcomes align**

An elegant solution for the  
correction of presbyopia



MADE IN UK



We've been innovating IOLs longer than anyone else.

Rayner manufactured the world's first IOL in 1949, and has remained at the forefront of innovation for nearly 70 years, focused on providing you and your patients with the best IOLs - always driven by science to improve patient outcomes and safety.

Rayner is the only manufacturer of IOLs in the UK, with its state-of-the-art manufacturing plant and Global Headquarters on the South Coast of England.

Supplementing Rayner's family of IOL systems is a full spectrum of OVDs, the RayPRO™ patient outcomes app, as well as a range of tear film and pharmaceutical eye care products.

## Rayner Sulcoflex® Trifocal: An elegant solution for the correction of presbyopia

### The Situation

As a cataract and refractive surgeon, achieving the best possible visual results for your patients is paramount. However, challenging patients may expect more, and demand a chance of being spectacle free.

### The Solution

The Sulcoflex® Trifocal supplementary IOL is an adjustable option which allows you to treat an even wider range of patients for presbyopia, to meet both their visual and lifestyle needs.

## A proven patented optic design for comfortable transition from near to distant visual ranges

### Indications<sup>1,3</sup>

For pseudophakic patients with a primary capsular bag IOL

- |   |  |   |  |
|---|--|---|--|
| ✓ | Presbyopia (DUET procedure)                      | ✓ | Post-surgical ametropia                              |
| ✓ | Pseudophakic presbyopia* (secondary enhancement) | ✓ | Patients experiencing a dynamic change of refraction |

\*Contraindicated for implantation into eyes with multifocal capsular bag IOLs.

# Features and benefits of the Sulcoflex® Trifocal IOL

**SULCOflex**  
TRIFOCAL

## Improved visual outcomes designed for less pupil dependency

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

### Large, 6.5mm round-edged optic, designed to:

- Reduce the risk of pupillary block and photic effects
- Reduce risk of optic-iris capture<sup>1</sup>
- Minimise edge glare and associated dysphotopsia<sup>1</sup>

### Optic Surface Features:

- 16 diffractive rings/steps
- 4.5 mm diffractive trifocal zone
- >4.5 mm monofocal distance zone
- Smooth anterior surface to minimise iris chafe

### Sulcoflex Trifocal has been designed to offer the following patient benefits:

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

### Optimised diffractive design

Sulcoflex® Trifocal uses the Rayner patented diffractive profile that has been designed in partnership with a leading European technology institute. This new design of diffractive technology is the most advanced optic in our history and possibly the most advanced in the industry.

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

Sulcoflex® Trifocal



Graphical representations only of diffractive surface pattern.

### Large 14.0mm overall length with undulating haptics:

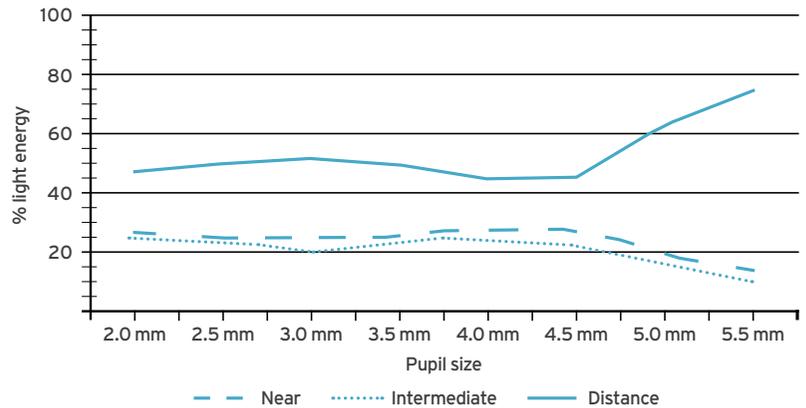
- Designed for stable fixation in the ciliary sulcus
- Unique undulating round edge haptic design with 10° angulation
- Excellent centration stability compared to capsular bag fixated multifocal IOLs<sup>5</sup>
- Reduced risk of uveal contact and abrasion<sup>1</sup>
- Reduced Pigment Dispersion Syndrome<sup>1</sup>
- Smooth undulating haptics to minimise the risk of adverse tissue reaction in the sulcus

### Rayacryl Material for:

- Good uveal Biocompatibility<sup>7</sup>
- Superb optical clarity - no vacuoles or glistenings<sup>8</sup>

**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**

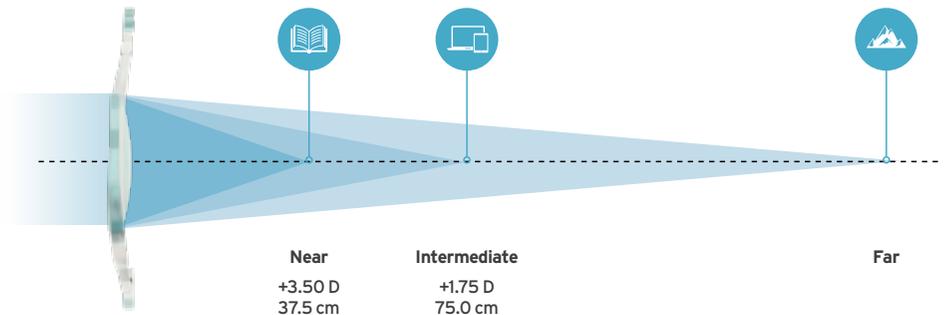
- Sulcoflex® Trifocal improves intermediate visual acuity enabling patients to feel **more comfortable transitioning from near to distance activities**
- Sulcoflex® Trifocal is designed with:

**+3.50 D near add**

37.5 cm reading plane

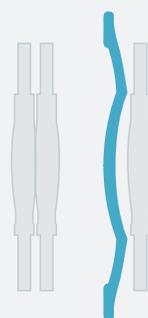
**+1.75 D intermediate add**

75.0 cm reading plane

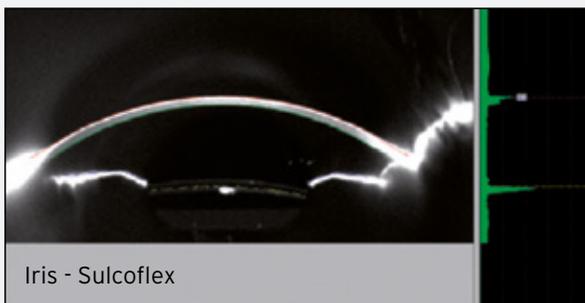


Designed to avoid the potential problems of conventional "piggy-back" IOLs<sup>1,6,9</sup>

- Unique posterior concave surface minimises the possibility of interaction with the primary IOL
- Reduced likelihood of unwanted photopic effects
- Reduced refractive error with hyperopic defocus



Physical contact between the two IOLs minimised.



When considering a solution for presbyopia, what is important to you?

- ✓ Exceptional light usage
- ✓ Ease of Use<sup>2</sup>
- ✓ Efficacy & patient outcomes<sup>2</sup>
- ✓ Versatility to treat a wider range of patients<sup>3</sup>
- ✓ An adjustable solution for peace of mind
- ✓ Increased accuracy with quarter dioptre steps

With the Rayner Sulcoflex platform, you can expect the following:

#### Predictability<sup>1,3,5</sup>

- Proven to provide better centration compared to capsular bag multifocal IOLs
- Predictable refractive outcomes; high visual acuity

#### High patient satisfaction<sup>2,3</sup>

- Low complication rate
- Stable long-term refractive results

#### Reduced surgical risk associated with IOL exchange<sup>1,4,6</sup>

- Less surgical trauma than primary IOL exchange
- Avoids sometimes difficult removal of fibrosed, fixated primary implant
- Allows for implantation reversibility



*"The world's first trifocal supplementary IOL may be used in routine cataract-procedures (DUET) or in pseudophakes for presbyopic correction. This IOL-concept allows the surgeon to adjust the optical system to any unpredictable situation in the future."*

**Michael Amon MD, Professor and Head of the Department of Ophthalmology at the Academic Teaching Hospital of St John, Vienna, Austria**

# Sulcoflex Trifocal: Delivery

Rayner recommends and provides the Medice Accuject 1.8-1P (LP604540) for use with the Sulcoflex Trifocal IOL

Model Name:	Sulcoflex® Trifocal
Model Number:	IOL703F
Power Range:	-3.0 D to +3.0 D (increments 0.5 D). -1.0 D to +1.0 D (increments 0.25 D) Trifocal, diffractive, +3.5 D near add and +1.75 D intermediate add at the IOL plane

Aspheric Trifocal IOL	
Material:	Single piece Rayacryl® hydrophilic acrylic
Water Content:	26% in equilibrium
UV Protection:	Benzophenone UV absorbing agent
UV Light Transmission:	UV 10% cut-off is 380 nm
Refractive Index:	1.46
Overall Diameter:	14.00mm
Optic Diameter:	6.50mm
Optic Shape:	Anterior convex, posterior concave
Asphericity:	Aberration-neutral technology
Haptic Angulation:	10° Posterior angulation
Haptic style:	Undulating and rounded C-loop haptics
Estimated constant for power calculation	Expected lens position = 4.5 mm

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2. Khan, M.I. & Muhtaseb, M. Piggybacking with the Sulcoflex. *J Cataract Refract Surg*. 2010;36:14-6.
3. Claoué et al. Sulcoflex® Pseudophakic Supplementary IOLs. *CRST Euro Supple*. 2009.
4. Amon MI et al. Enhancing pseudophakic vision with the Rayner Sulcoflex lens. *ESCRS Euro Times Supple*. 2012;2-3.
5. Prager F et al. Capsular bag-fixated and ciliary sulcus-fixated intraocular lens centration after supplementary intraocular lens implantation in the same eye. *J Cataract Refract Surg*. 2017;43(5):643-647.
6. Kahraman G, Amon M, Vienna, Austria. New Supplementary intraocular lens for refractive enhancement in pseudophakic patients. *J Cataract Refract Surg*. 2010 Jul;36(7):1090-4.
7. Tomlins PJ et al. Long-term biocompatibility and visual outcomes of a hydrophilic acrylic intraocular lens in patients with uveitis. *J Cataract Refract Surg*. 2014; 40:618-625.
8. Rayner data on file.
9. Manzouri B et al. Supplementary IOLs: Monofocal and Multifocal, Their Applications and Limitations. *Asia-Pacific Journal of Ophthalmology*. Vol 6, Number 4, July/ August 2017.

**Rayner**  
Your Skill.  
Our Vision



3 year  
patient  
data



IOLs



OVDs



Dry Eye



Discover more about the Sulcoflex® Trifocal, visit [rayner.com/sulcoflextrifocal](http://rayner.com/sulcoflextrifocal)