

Acriva^{LD} Reviol Tri-ED



TriED 611



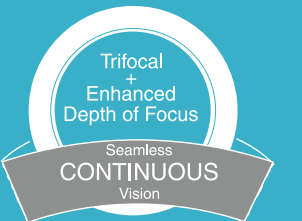
Acriva^{LD}
Reviol
Tri-ED
Trifocal+ Enhanced Depth of Focus



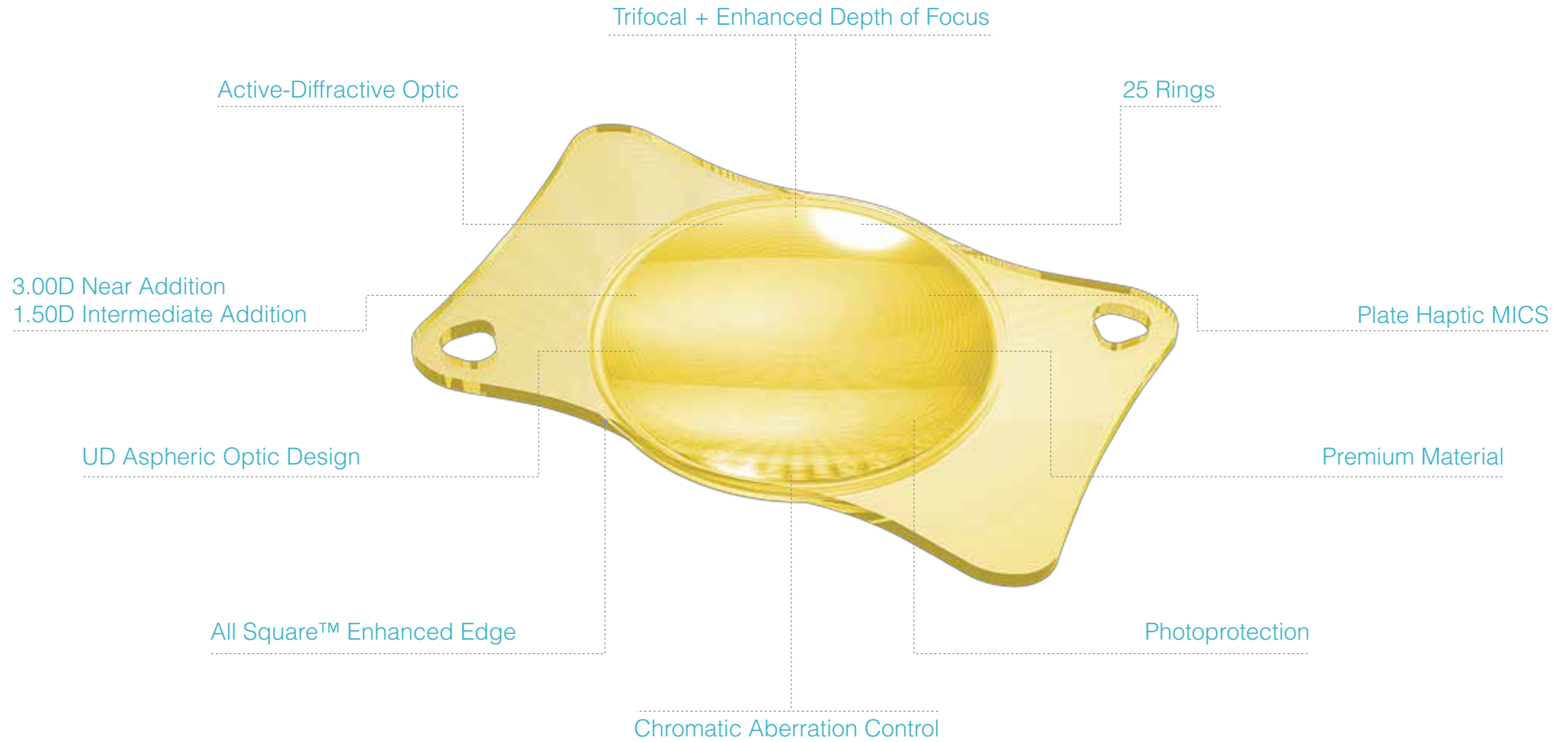
VSY Biotechnology BV Strawinskylaan 1143, 1077 XX Amsterdam - The Netherlands
T: +31(0)20 782 00 01 F: +31(0)20 782 00 02
info@vsybiotechnology.com www.vsybiotechnology.com



2016 VSY Biotechnology BV 05/16 MKT Rev-04



Seamless Continuous Vision



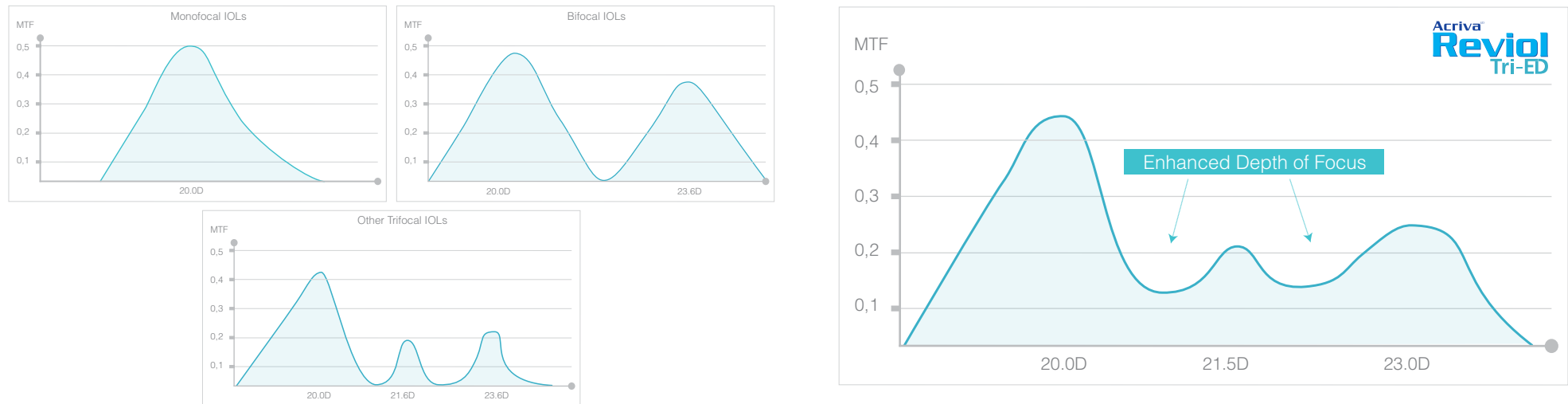
New Approach in Presbyopia Correction

1

Trifocal + Enhanced Depth of Focus (EDOF)

Seamless Continuous Vision

Our new approach to diffractive trifocal technology brings seamless continuous vision to the presbyopia treatment in cataract surgery. **Reviol Tri-ED*** is the **Trifocal Optic** combined with **Enhanced Depth of Focus** vision. Innovative zone establishment displays excellent MTF values even between the intermediate zones. **Reviol Tri-ED*** showed superior MTF results according to comparative analyses against current trifocal IOLs¹. The more resolution there is, the happier the patient is.



MTF, Modular Transfer Function measures the performance of an optical system based on the amount of contrast that is passed through optic in a determined spatial frequency. Defining the acceptable standards, the threshold has been determined by The International Organization for Standardization (ISO) standard 11979-2². MTF test results of **Reviol Tri-ED*** will bring seamless continuous vision to the patient.

References

1- Data on File 2- International Organization for Standardization. Ophthalmic Implants– Intraocular Lenses – Part 2. Optical Properties and Test Methods. Geneva, Switzerland, ISO, 1999 (ISO 11979-2); technical corrigendum 1. 2003

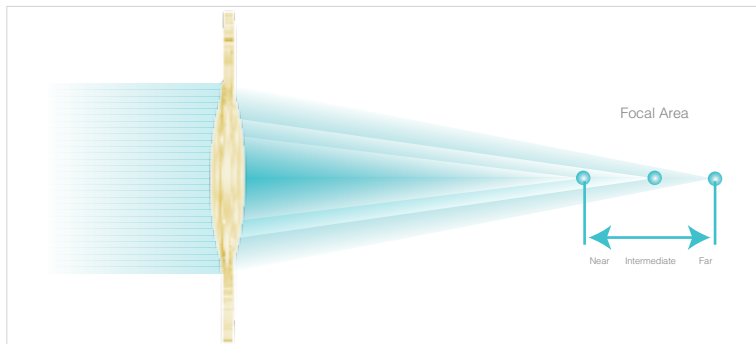
* Patent Pending Technology

Innovative Diffraction

2 Active Diffractive Optic

Maximum Light Transfer

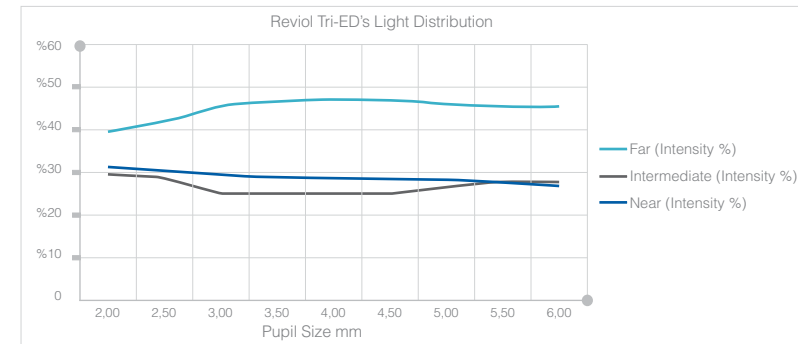
The reliable performance of Reviol's Active-Diffractive optic has been proven in over forty countries with thousands of implantations. **Reviol Tri-ED*** optic provides maximum light transmission to the retina with excellent light distribution. Effective light transmittance reaches up to 89.1% on average.



Diffractive multifocal IOLs separate light into near to distance by creating a phase difference. **The rings of Reviol Tri-ED*** were designed with unique height, width and interval distance. The distribution of the rings on all surface delivers unique visual performances.

Optimum Light Distribution

Light is distributed by 44% far, 28% intermediate and 28% near at 6mm aperture pupil size in **Reviol Tri-ED***. Balanced light distribution provides increased contrast sensitivity even at mesopic light conditions.



The success of optical performance in multifocal intraocular lenses relies on determining the optimum diffraction efficiency as a percentage of light into diffraction orders. Unique diffractive zones of **Reviol Tri-ED*** split light through focal paths without running the risk of losing light by directing it outside of far and near foci.

* Patent Pending Technology

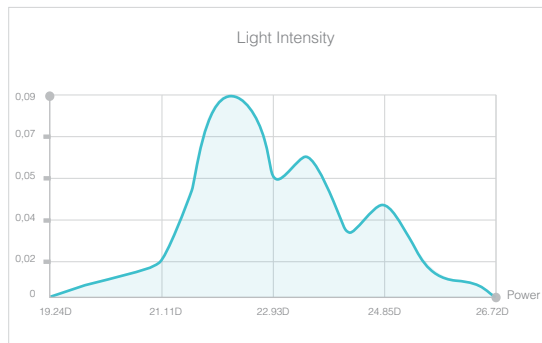
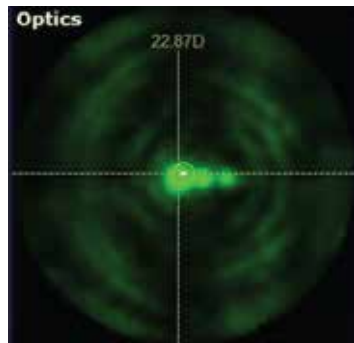
| Trifocal IOLs Energy Loss Graphic | |
|-----------------------------------|-----|
| Reviol Tri-ED Semi-Apodized Optic | %11 |
| Trifocal+Bifocal Combined Optic | %14 |
| Trifocal IOL with Convolution | %15 |

Promising Results¹

3 Semi-Apodization

Appropriate Disparity

Reviol Tri-ED* is combined with 3.0D near addition and 1.5D intermediate addition for creating a revolutionary three-phase difference. Adequate and appropriate disparity selected in Reviol Tri-ED* between near and intermediate focus excludes overlapping problems and creates sharp vision at all distances.

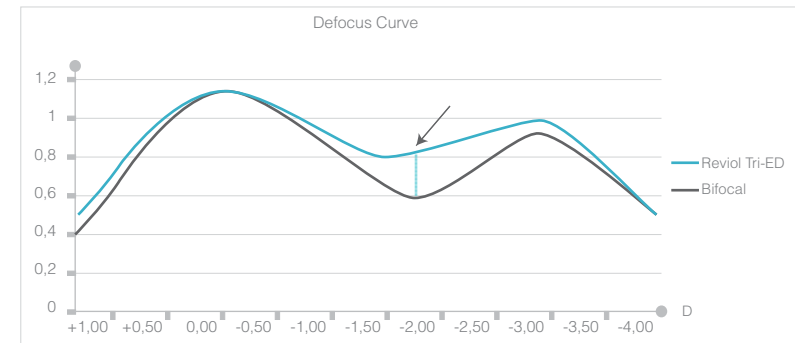


Diffraction efficiency is directly correlated with imaging characteristics and overall image performance of a multifocal optic. Focal overlapping between light centralization in different points plays a negative role in image quality and photopic phenomena. The detached focal zones of Reviol Tri-ED* optic design have been optimized according to test results of geometrical model.

4 Clinical Results

Enhanced Visual Acuity for All Distances

Clinical findings reported that Reviol Tri-ED* presents significant improvements in UDVA, UIVA and UNVA. Superior intermediate visual acuities were observed in binocular defocus curve in comparison with bi-focal multifocal IOLs.



Post-operative refractive outcomes were within the range of -0.75 to +0.25 diopter. No severe glare/halo problems have been reported. All contrast sensitivity results were at the range of 3-12 spatial frequencies measurements and 92% of patients reported spectacle independence in the questionnaire form³.

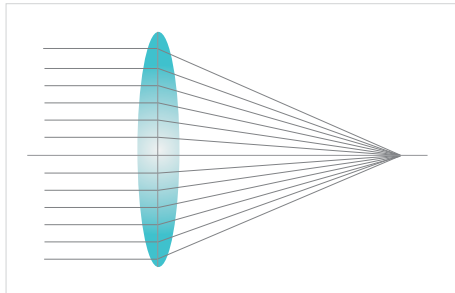
References
 3- Data on File
 * Patent Pending Technology

All-in-One Platform¹

5 Ultra Definition Optic

Advanced Vision of Aspheric Design

Ultra Definition optic design corrects spherical aberrations coming from both cornea and IOL. However, **Reviol Tri-ED*** IOLs have a slight negative asphericity, which maintains part of the positive aberration of the cornea, helping patient to keep better depth of focus^{4,5}.



Advantage of Ultra Definition Design

- Improved contrasts under low light condition
- Preserved depth of focus
- Less sensitive to decentration

6 All Square 360° Enhanced Edge

Real PCO Barrier

The innovative edge design tends to greatly reduce PCO risks by making a geometric and mechanical barrier against cells proliferation. The edge design produces thinner lenses for equivalent power than other competitors



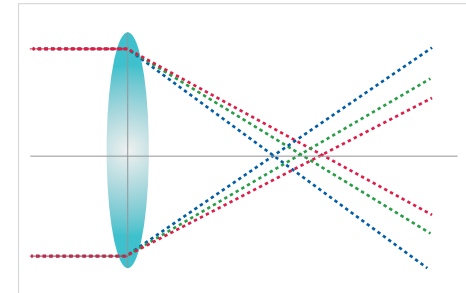
Exceptional Design

All Square 360° enhanced edge and premium material form a dual barrier against the risk of Posterior Capsule Opacification after implantation. Recent studies have shown that square edge on posterior surface of the optic is the most important IOL-related factor against PCO formation.^{6,7}.

7 Superior Chromatic Aberration Control

Clear Vision

Abbe Number of **Reviol Tri-ED*** is 58, one of the highest numbers in the IOL market, measured by an independent laboratory⁸. This proves that **Reviol Tri-ED*** a superior chromatic aberration control.



The Importance of Abbe Number

Chromatic aberration is a type of distortion in optical system formed by different wavelengths of light to have different focal points. The higher the Abbe number is the lower the chromatic dispersion is⁸.

References

4- Holladay JT, Piers PA, Korayni G, et al. A new intraocular lens design to reduce spherical aberration of pseudophakic eyes. J Refract Surg. 2002, 18 (6):683-691. 5- Bellucci R, Morselli S, Piers P. Comparison of wavefront aberrations and optical quality of eyes implanted with five different intraocular lenses. J Refract Surg. 2002;20(4):297-306. 6- Can I., Ceran BB., Soyugelen G., Takmaz T. Comparison of clinical outcomes with 2 small-incision diffractive multifocal intraocular lenses. Journal of Cataract & Refractive Surgery 2012 Vol 38 No1 7- Data on file. 8- Huawei Zhao, Martin A Mainster The effect of chromatic dispersion on pseudophakic optical performance Br J Ophthalmol 2007;91:1225-1229. * Patent Pending Technology

| | |
|-------------------------------------|---|
| General | Trifocal + EDOF, Foldable, Single Piece, Aspheric, Achromatic, Hydrophobic Surface, UV Filter |
| Optic Size | 6.00mm |
| Optic Design | Active-Diffractive Trifocal+EDOF |
| Haptic Size | 11.00mm |
| Haptic Design | Plate Haptic |
| Haptic Angle | 0° |
| Aspheric Value | - 0,165 μm (Mild Negative Correction) |
| Abbe Number | 58 |
| Light Transmission | 89.1% |
| Light Distribution | Photopic Condition 40% Far – 30% Intermediate - 30% Near Mesopic Condition 44% Far – 28% Intermediate - 28% Near |
| Square Edge | All 360° Enhanced Edge |
| Acustic (Nominal) A Constant | 118.0 |
| Optical A Constants | SRK-II : 118.5 |
| | SRK-T : 118.3 |
| | ACD : 4.97 |
| | Haigis a0 : 0.67 |
| | Haigis a1 : 0.40 |
| | Haigis a2 : 0.10 |
| | Hoffer Q pACD : 4.96 |
| Sf : 1.27 | |
| Diopter Power Range | From 0.0D to +32.00 D (0.50D increments) |
| Refractive Index Dry | 20°C /35°C 1.509 / 1.509 ± 0.002 |
| Refractive Index Wet | 20°C /35°C 1.462 / 1.462 ± 0.002 |
| Recommended Injector | Acrijet Blue 1.8 (Up to 24.0 D) |
| | Acrijet Blue 2.4 (Up to 32.0 D) |

Tri-ED 611

