



**Acriva<sup>LD</sup>**  
**Reviol**  
Multifocal Intraocular Lens

Multifocal

# Active-Diffractive Optic is Different

Do you know why? 

Maximum Light Transmission

Pupil-independent Light Distribution

3.75D Near Addition

Visual Performance After Implantation

Ring Transition Zones

Exceptional Optic Engineering

Better Visual Quality

Increased Contrast Sensitivity

Improved Intermediate Vision

Enhanced Visual Acuity for All Distances

Limited Photopic Phenomena

Square Edge and Aspheric Design

# Discover the Difference<sup>1</sup>

## 1 Maximum Light Transmission

### Better Visual Quality

*Not all diffractive IOLs are the same. The unique design of Reviol's Active-Diffractive zones provides excellent light transmission at maximum range under any light condition.*



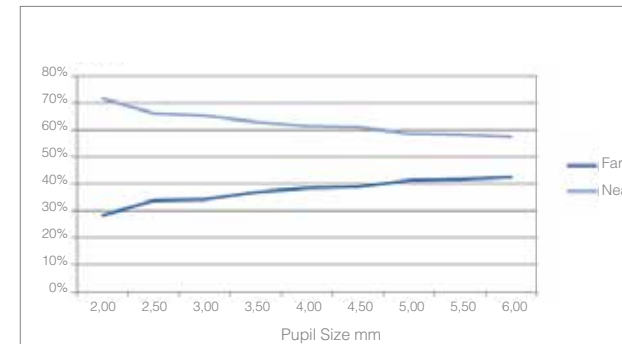
Diffractive Zones of Reviol

The performance of multifocal IOLs is based on their establishment of diffractive zones. The different number, height, interval and width of the rings affect patient total visual outcomes under lower light conditions. Diffractive multifocal IOL engineering is based on balanced light energy between foci. Narrow rings increase the near addition. Conversely higher steps enable the transfer of more energy to near focus<sup>1</sup>.

## 2 Pupil-independent Light Distribution

### Increased Contrast Sensitivity

*Reviol's Active-Diffractive optic preserves a better balance of 60% far and 40% near focus at 6mm pupil aperture. Balanced light distribution under any light condition increases contrast sensitivity.*



Reviol's Light Distribution

Decreased contrast sensitivity in mesopic light conditions has been reported in pupil-dependent multifocal IOLs<sup>2</sup>. This phenomenon is explained by a light distribution change of 90% for far focus and 10% for near focus at 6mm pupil diameter. The lower energy transfer to near focus causes poor visual acuity for the patient<sup>3</sup>.

#### References

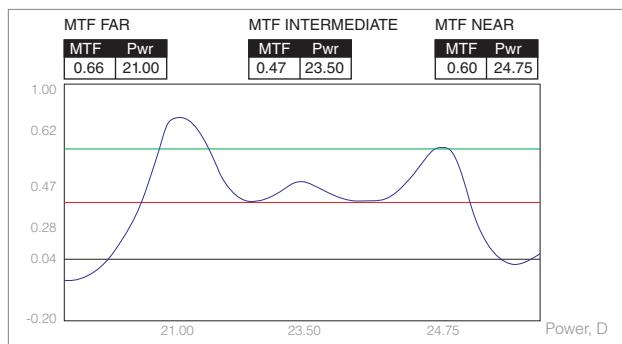
1- Portney V., Light distribution in diffractive multifocal optics and its optimization. J Cataract Refract Surg 2011; 37:2053-2059. 2- de Vries NE, Nuijts RM. Multifocal intraocular lenses in cataract surgery: literature review of benefits and side effects. J Cataract Refract Surg. 2013 Feb;39(2):268-78. 3- Petermeier K, Messias A, Gekeler F, Szurman P. Effect of +3.00 diopter and +4.00 diopter additions in multifocal intraocular lenses on defocus profiles, patient satisfaction, and contrast sensitivity. J Cataract Refract Surg. 2011 Apr;37(4):720-6.

Experience the Difference<sup>1</sup>

### 3 3.75D Near Addition

#### Improved Intermediate Vision

3.75D near addition in Reviol's Active-Diffractive Optic has the appropriate balance to provide better intermediate visual acuity<sup>4</sup>.

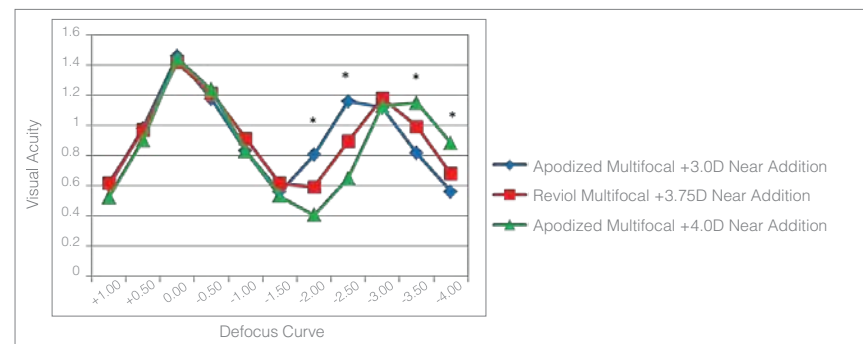


Near addition is crucial in energy distribution through near to distance focus. Insufficient near addition results in inadequate disparity between foci, which causes blurred vision at intermediate focus. Excessive near addition eliminates focus overlapping and provides sharp near and distance vision. On the other hand reduced visual performance may result, which causes difficulties in patient adaptation<sup>3</sup>.

### 4 Visual Performance After Implantation

#### Enhanced Visual Acuity for All Distances

In the results of defocus curve graphic, Reviol's Active-Diffractive optic has better intermediate vision than Apodized +4.0D multifocal IOLs, and better near visual performance in comparison with Apodized +3.0D multifocal IOLs<sup>5</sup>.



\*There were statistically significant differences in near and intermediate visual acuities among three groups. (P < 0.05)

The defocus curve was determined in a comparative study on 130 eyes of 87 patients. The study compared the performances of Reviol +3.75D near addition with an apodized multifocal IOL +3.0D near addition and an apodized multifocal IOL +4.0D near addition.<sup>5</sup>

#### References

3- Petermeier K, Messias A, Gekeler F, Szurman P. Effect of +3.00 diopter and +4.00 diopter additions in multifocal intraocular lenses on defocus profiles, patient satisfaction, and contrast sensitivity. J Cataract Refract Surg. 2011 Apr;37(4):720-6. 4- 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 5- Data on file.

# See the Difference<sup>1</sup>

## 5 Ring Transition Zones

### Limited Photopic Phenomena

*Reviol's progression zones are rounded in a unique manufacturing process.*



Photopic Phenomena

Improved Vision

Sharper transition zones interact with photopic phenomena as light refracts wildly.

## 6 Exceptional Optic Engineering

### Square Edge and Aspheric Design

*Reviol's enhanced 360° square edge and premium material make a dual barrier against PCO formation after implantation. The aspheric design of the Reviol "UD technology", compensates for the positive spherical aberration of the cornea while preserving depth of focus.*



Depth of Focus

Recent studies concluded that a square edge on the posterior optic surface is the most important IOL-related factor against PCO formation. According to different experimental studies, this may be due to the mechanical barrier effect exerted by the square edge<sup>6,7</sup>.

Corneal topography measurements on 71 cataract patients have shown that average spherical aberration of the human cornea is +0.27 microns. With spheric IOL implantation total ocular spherical aberration becomes increasingly positive. Poor contrast sensitivity has been reported in many postoperative cataract patients after implantation of spheric IOLs<sup>8, 9</sup>.

#### References

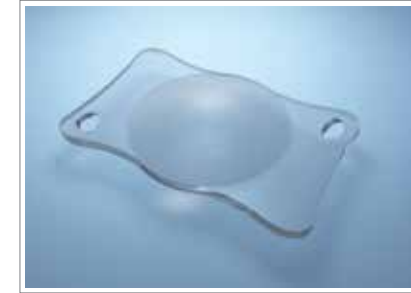
6 - Kohnen T, Maqowski G, Koch DD. Scanning electron microscopic analysis of foldable acrylic and hydrogel intraocular lenses. J Cataract Refract Surg. 1996; 22:1342-1350. 7- Werner L, Mamalis N, Pandey SK, et al. Posterior capsule opacification in rabbit eyes implanted with hydrophilic acrylic intraocular lenses with enhanced square edge. J Cataract Refract Surg 2004; 30:2403-2409. 8- 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. 9- Bellucci R, Morselli S, Piers P. Comparison of wavefront aberrations and optical quality of eyes implanted with five different intraocular lenses. J Refract Surg. 200,20(4):297-306.



MF 613



MFB 625



MFM 611

Optic Size	6.00mm
Optic Design	Biconvex
Haptic Size	13.00mm
Haptic Design	Modified C
Haptic Angle	0°
Recommended Ac. A Constant	118.0
Recommended Op. A Constant	Srk-T : 118.1 - Srk-II : 118.3
Diopter Power Range	From 0.0D to +32.00 D (0.50D increments)
Special Production	From +32.50D to +45.00D (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 & Cartridge System	Acrijet Green 2.0 (Up to 25.0 D) Acrijet Green 2.2 (Up to 30.0 D)

Optic Size	6.00mm
Optic Design	Biconvex
Haptic Size	12.50mm
Haptic Design	Balance Modified C
Haptic Angle	0°
Recommended Ac. A Constant	118.0
Recommended Op. A Constant	Srk-T : 117.9 - Srk-II : 118.0
Diopter Power Range	From 0.0D to +32.00 D (0.50D increments)
Special Production	From +32.50D to +45.00D (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 & Cartridge System	Acrijet Green 2.0 (Up to 25.0 D) Acrijet Green 2.2 (Up to 30.0 D)

Optic Size	6.00mm
Optic Design	Biconvex
Haptic Size	11.00mm
Haptic Design	Plate
Haptic Angle	0°
Recommended Ac. A Constant	118.0
Recommended Op. A Constant	Srk-T : 118.3 - Srk-II : 118.5
Diopter Power Range	From 0.0D to +32.00 D (0.50D increments)
Special Production	From +32.50D to +45.00D (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 & Cartridge System	Acrijet Green 1.8 (Up to 25.0 D) Acrijet Green 2.0 (Up to 28.0 D) Acrijet Green 2.2 (Up to 30.0 D)





BB MF 613



BB MFM 611



*multifocal  
toric*

BB T MFM 611

Material	Hydrophobic surface, acrylic with 25% water content, blue filter
Optic Size	6.00mm
Optic Design	Active-Diffractive Multifocal
Haptic Size	13.00mm
Haptic Design	Modified C
Haptic Angle	0°
Recommended Ac. A Constant	118.0
Recommended Op. A Constant	Srk-T:118.1 - Srk-II:118.3
Diopter Power Range	From 0.0D to +32.00 D (0.50D increments)
Special Production	From +32.50D to +45.00D (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 & Cartridge System	Acrijet Green 2.0 (Up to 25.0 D) Acrijet Green 2.2 (Up to 30.0 D)

Material	Hydrophobic surface, acrylic with 25% water content, blue filter
Optic Size	6.00mm
Optic Design	Active-Diffractive Multifocal
Haptic Size	11.00mm
Haptic Design	Plate
Haptic Angle	0°
Recommended Ac. A Constant	118.0
Recommended Op. A Constant	Srk-T:118.3 - Srk-II:118.5
Diopter Power Range	From 0.0D to +32.00 D (0.50D increments)
Special Production	From +32.50D to +45.00D (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 & Cartridge System	Acrijet Green 1.8 (Up to 25.0 D) Acrijet Green 2.0 (Up to 28.0 D) Acrijet Green 2.2 (Up to 30.0 D)

Material	Hydrophobic surface, acrylic with 25% water content, blue filter
Optic Size	6.00mm
Optic Design	Active-Diffractive Multifocal Toric
Haptic Size	11.00mm
Haptic Design	Plate
Haptic Angle	0°
Recommended Ac. A Constant	118.0
Recommended Op. A Constant	Srk-T:118.3 - Srk-II:118.5
Diopter Power Range	Spheric: From 0.0D to +32.00D (0.50D increments) (CUSTOM MADE) Cylindric: From +1.00D to +10.00D (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 & Cartridge System	Acrijet Green 1.8 (Up to Sph 25.0 D Cyl 5.0 D) Acrijet Green 2.0 (Up to Sph 28.0 D Cyl 5.0 D) Acrijet Green 2.2 (Up to Sph 30.0 D Cyl 5.0 D)



Acriva<sup>UD</sup> Reviol



MF 613



MFB 625



MFM 611

Acriva<sup>UD</sup> BB Reviol



BB MF 613



BB MFM 611

Acriva<sup>UD</sup> BB Reviol Toric



BB T MFM 611

