VSY BIOTECHNOLOGY
we inspire...

THE GOLDEN RATIO IN ENHANCED SINUSOIDAL TRIFOCAL IOL TECHNOLOGY

NO MORE COMPROMISE

Halo & Glare? Not a Problem Anymore[1,2,3]

Minimized dysphotopsia due to reduced scattered light

NO MORE BOUNDARIES

Comfortable Reading Distances[6,7,8,9]

Sinusoidal Vision Technology (SVT®) provides spectacle-free life from all distances

DISCOVER THE COLORS OF LIFE

Maximum Light Transmission into Retina (93%)[4,5]

Unique sinusoidal pattern reduces light loss significantly, bringing a higher MTF result and better contrast sensitivity

DETAILS ARE IMPORTANT

Optical Excellence[10]

Outstanding visual outcomes even in mesopic conditions

ENHANCED SINUSOIDAL TRIFOCAL IOL TECHNOLOGY

Enhanced Sinusoidal Vision Technology developed by VSY Biotechnology is inspired by the **sinusoidal pattern** seen in nature.

What are Sinusoidal Diffraction Benefits?

The sinusoidal diffraction pattern **has naturally three different** foci appear as –1st (works for far), 0th (works for intermediate), and +1st (works for near) diffraction orders (Fig A)[11]. That is why sinusoidal diffraction **does not need to have an overlapping pattern and has a lower ring number.**

- **1 ring for 3 different foci**
- **Less glare and halo, more efficiency**[1,2,3]

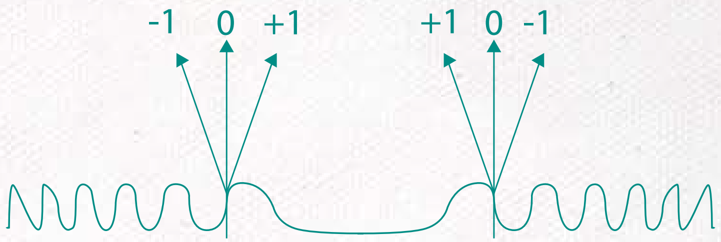


Fig A

No overlapping pattern and 3 different foci
Enhanced light utilization[12]

Enhanced Sinusoidal Vision Technology that mimics a sine wave-like surface profile is designed to obtain the **ideal optical performance:** minimum dysphotopsia, maximum light transmission, and optimum light distribution to let your patients enjoy seamless, continuous vision from all distances day and night.

NO MORE COMPROMISE

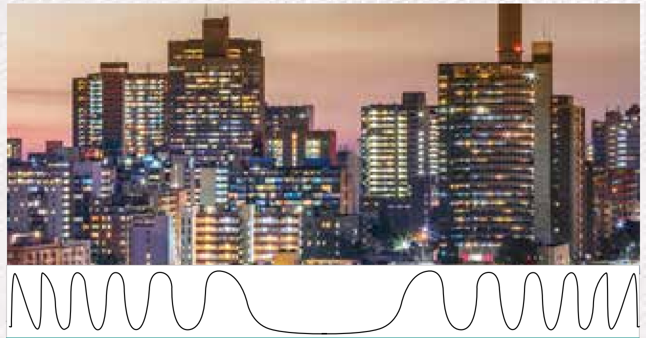
Halo & Glare? Not a Problem Anymore

Halo and Glare SVT® SINUSOIDAL VISION TECHNOLOGY Patented FIRST & ONLY IN THE WORLD Not a Problem Anymore

The overlapping pattern's sharp edges and pointy peaks on traditional trifocal IOLs are the main causes of positive dysphotopsia.

Acriva^UD Trinova Pro C Pupil Adaptive® has a smoothly varying surface profile that helps to reduce halos and glare by reducing scattered light.

Acriva^UD Trinova PRO pupil adaptive®



Acriva^UD Trinova Pro C Pupil Adaptive® ,
Sinusoidal Trifocal IOL Surface Profile
Unique Sinusoidal Pattern

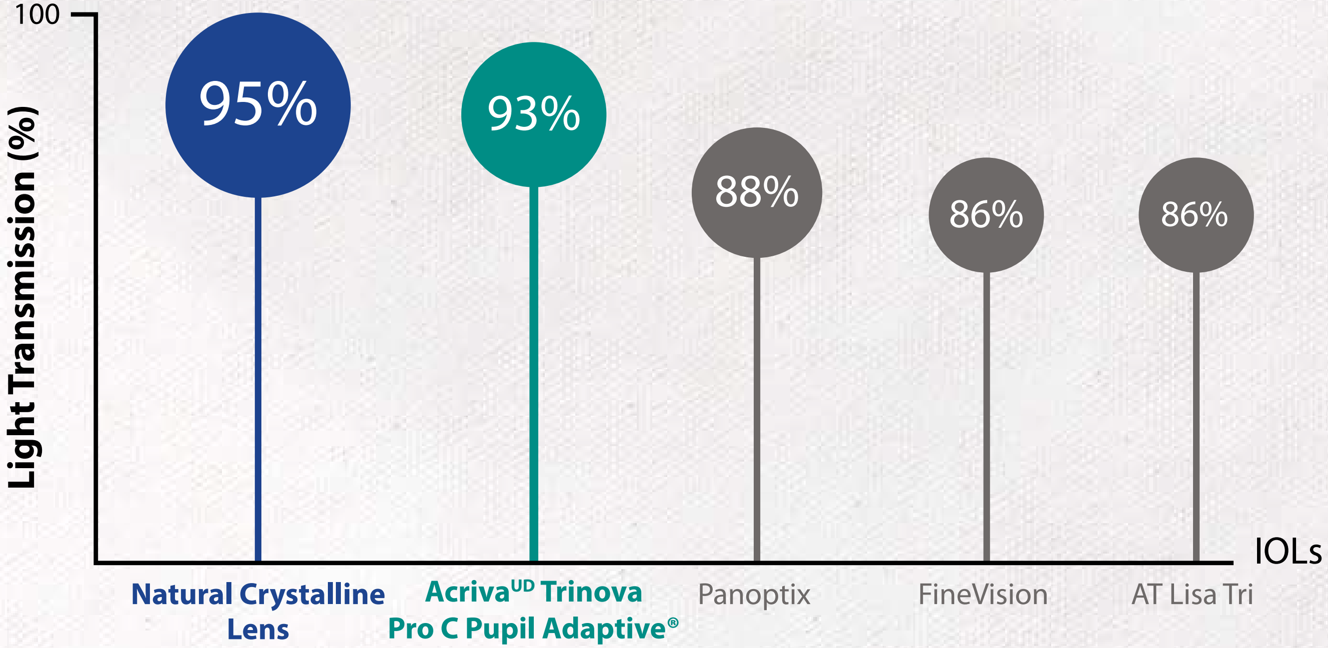
TRADITIONAL TRIFOCAL IOL

Traditional Trifocal IOL Surface Profile
Overlapping Pattern with Sharp Edges

DISCOVER THE COLORS OF LIFE

Maximum Light Transmission into Retina (93%)

Our unique sinusoidal pattern reduces light loss significantly, bringing a higher MTF result and better contrast sensitivity.



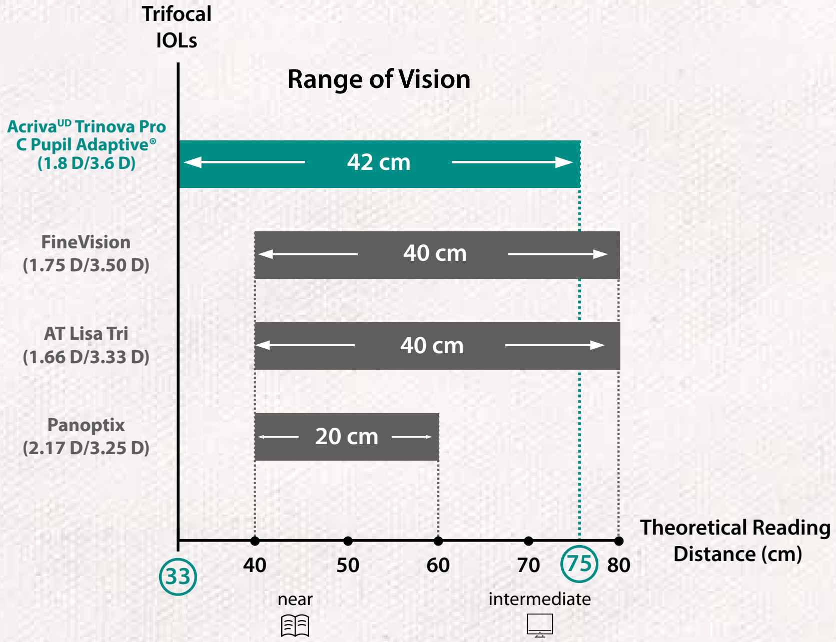
The Acriva UD Trinova Pro C Pupil Adaptive® s Enhanced Sinusoidal Optical profile is designed to ensure maximum light transmission (93%) to the retina, providing improved contrast sensitivity to enable your patients to enjoy all the colors of life.

The crystalline lens of a healthy 30-year-old individual has a 95% light transmission and Acriva UD Trinova Pro C Pupil Adaptive® offers the closest light transmission to this rate (93%). Trifocal IOLs with blazed diffractive patterns are known to cause significant light loss. Even 1% of light loss affects a patient's overall visual performance exponentially.

NO MORE BOUNDARIES

Comfortable Reading Distances

Enhanced Sinusoidal Vision Technology provides spectacle-free life from all distances.



+3.6 D near and +1.8 D intermediate addition of Acriva UD Trinova Pro C Pupil Adaptive® design offers exceptional contrast sensitivity and visual acuity from near, intermediate, and far distances.

Enhanced Sinusoidal Vision Technology is designed to provide the seamless vision required for all daily activities (reading, using mobile phone, watching TV, cooking, driving, etc.) without spectacles.

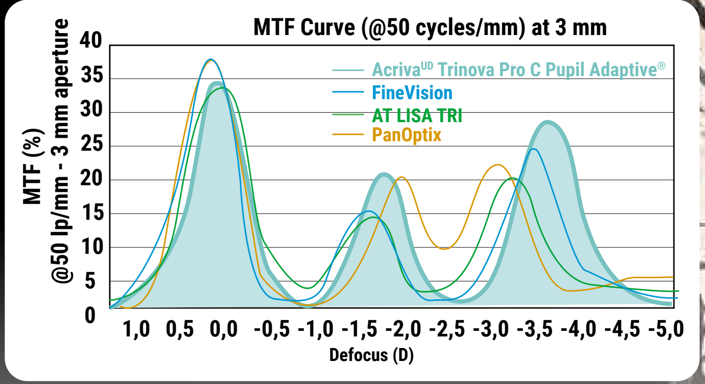
Acriva UD Trinova Pro C Pupil Adaptive® offers the widest range of vision (between 33- 75 cm) compared to other trifocal IOLs listed in the table.

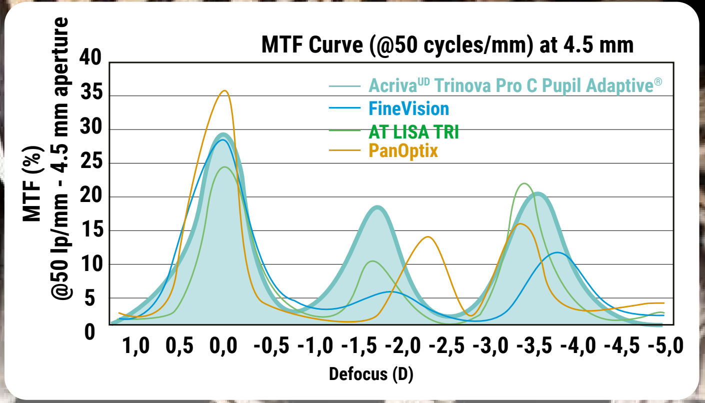
DETAILS ARE IMPORTANT

Optical Excellence

Outstanding visual outcomes even in mesopic conditions

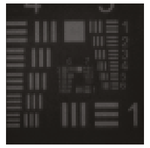
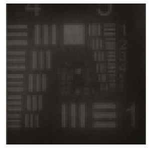
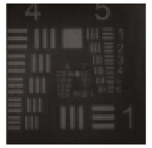
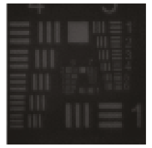
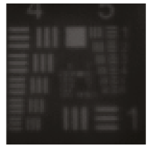
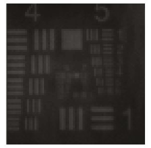
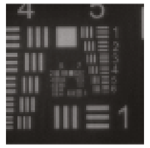
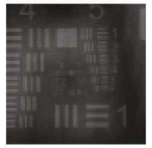
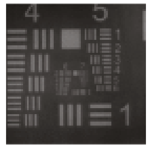
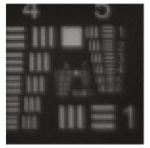
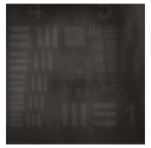
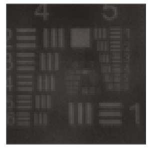
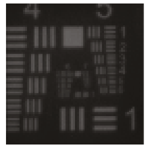
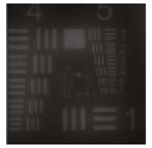
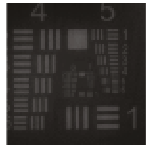
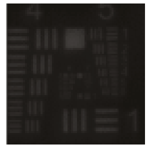
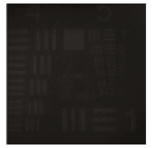
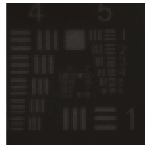
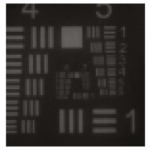
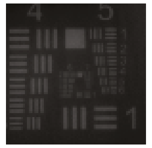
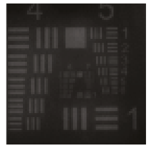
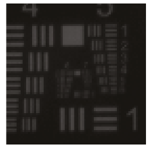
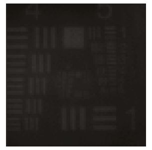
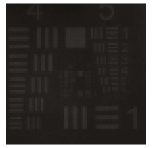
Acriva^{UD} Trinova Pro C Pupil Adaptive® is designed to produce the best possible MTF results in a trifocal IOL. The MTF outcome shows the image quality at different focal points.





As seen in the MTF curve, at photopic conditions, **Acriva^{UD} Trinova Pro C Pupil Adaptive®** showed exceptional performance throughout the foci thanks to its unique sinusoidal optic design.

In light of the MTF curve in mesopic conditions, **Acriva^{UD} Trinova Pro C Pupil Adaptive®** clearly provides better optical image quality—namely, better contrast at near and intermediate distances compared to other trifocal IOLs.

	3 mm			4.5 mm		
	FAR	INTERMEDIATE	NEAR	FAR	INTERMEDIATE	NEAR
Acriva Trinova PRO pupil adaptive						
FineVision						
AT LISA Tri						
PanOptix						

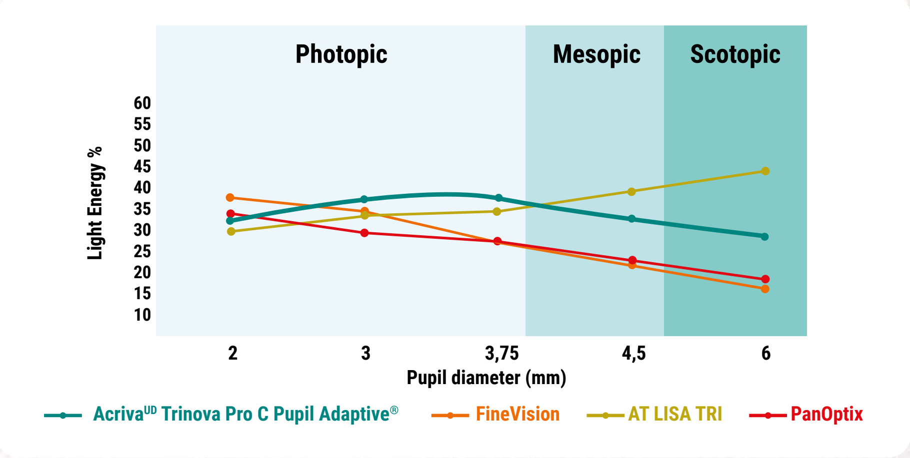
As the name implies, a resolution test pattern is a tool for measuring the resolving power of an optical system. It consists of reference line patterns with well-defined thicknesses and spacings. The test helps demonstrate the performance of a lens's resolution in photopic and mesopic conditions. The USAF resolution test performed for **Acriva^{UD} Trinova Pro C Pupil Adaptive®** at different apertures revealed excellent performance compared with other trifocal IOLs.

GOLDEN RATIO IN TRIFOCALITY

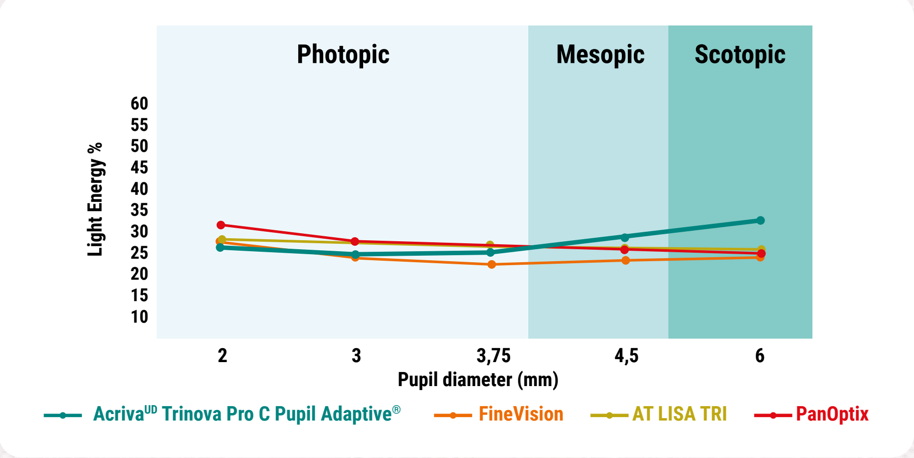
ENERGY DISTRIBUTION ADAPTED BY PUPIL SIZE

Acriva[UD] Trinova Pro C Pupil Adaptive® smartly distributes the light energy between the three foci according to different illuminance levels and pupil sizes to maximize light utility, retinal photoreceptor interactions, high contrast sensitivity, resolution and wide range of vision including reading distance, eliminating the need for spectacles in every lighting situation.

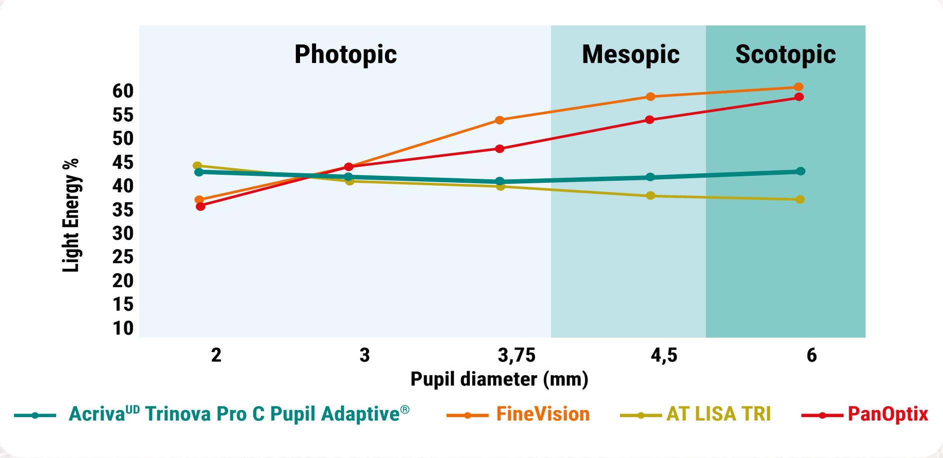
NEAR



INTERMEDIATE



FAR



Acriva[UD] Trinova Pro C Pupil Adaptive® distributes the light energy between the foci in such a way so that in mesopic illuminance levels, the light energy is directed to the near and intermediate vision, while in scotopic illuminance levels, this amount of light energy is distributed to far and intermediate vision more than near, as shown in the above figures in mesopic and scotopic conditions, and near vision is empowered for photopic conditions.

Acriva[UD] Trinova Pro C Pupil Adaptive® distributes effective and efficient light energy into the near and intermediate foci while maintaining distance visual acuity due to minimized light loss in the diffraction orders provided by enhanced light distribution with patented Sinusoidal Vision Technology.

GOLDEN RATIO IN TRIFOCALITY: IOL ADAPTING TO REAL LIFE CONDITIONS...

Pupil diameter changes by lighting condition and eye accommodation state.[13,14,15]

Changing pupil diameter affects our visual performance due to the retinal illumination level and the directional sensitivity of the retinal photoreceptor cells.[16]

Retinal image quality has been shown to correlate better with VA tasks of lower contrast and lower luminance than the task of photopic high contrast (HC)-VA.

Therefore evaluating IOL performance and patient satisfaction in a standard examination room under the ideal conditions of 2-3 mm pupil diameter, mega contrast letters, and optimum light conditions do not reflect the real-life experience.[17,18,19,20]

Now Acriva[UD] Trinova Pro C Pupil Adaptive®, with enhanced light distribution with patented Sinusoidal Vision Technology, each sinusoidal wave is optimized to reach an ideal design just like the Golden Ratio in nature. Thanks to renewed unique design, the lens adapts to the pupil diameter and provides maximum light efficiency, optimum energy distribution, and maximum visual acuity.

Acriva[UD] Trinova Pro C Pupil Adaptive® is designed for today's lifestyles; from viewing traffic signs comfortably and clearly while driving at night safely, to using mobile devices and computer screens to reading a book comfortably even in dim light with high-quality distance vision in a range of different light conditions. Thus it maximized spectacle independence at all distances and in every possible lighting condition.

Acriva[UD] Trinova Pro C Pupil Adaptive® aims to improve patients' quality of life by maximizing the quality of vision.

TECHNICAL FEATURES

Technology
Enhanced Sinusoidal
Pupil Adaptive Trifocal IOL

Optic Size
6.00 mm

Overall Length
13.00 mm

Haptic Design
C Loop (suitable for MICS)

Haptic Angle
0°

Material
Natural Chromophore with UV,
Violet, Blue Light Filter

Asphericity
Mildly Negative Bi-Aspheric Design

Abbe Number
58

Light Transmission
93%

Square Edge Design
360° All Enhanced Square Edge

Refractive Index
1.46

Dioptric Power Range
Sph. 0.0 to +32.0 D (0.5 D increments)

Nominal A-Constant
118.0

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Acriva Trinova PRO pupil adaptive

Acriva[UD]

Trinova

PRO

pupil adaptive®

Sinusoidal Vision Technology Trifocal IOL

TRINOVAPRO_C_BR_09/21_REV01

IOL

VISCOELASTICS

CARTRIDGE & INJECTOR

VSY BIOTECHNOLOGY

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VSY Biotechnology GmbH
Esslinger Str. 7, 70771 Leinfelden-Echterdingen, Germany
contact@vsybiotechnology.com / www.vsybiotechnology.com

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