

CE  
2460

Optiflex  
**GENESIS**  
NATURAL YELLOW

ASPHERIC HYDROPHOBIC  
NATURAL YELLOW IOL

EXPERIENCE  
**VISUAL  
BRILLIANCE**



biotech

VISIONCARE

## A breakthrough in hydrophobic IOL technology - NO GLISTENING

- Significantly less unfolding time
- Smooth injection without any issue
- Negative Asphericity ( $-0.20 \mu$ ) to compensate positive spherical aberration of cornea
- IOL Remains glistening free
- 360° advanced square edge



## Violet-Blue Light Filter: An optimal solution for Retina protection [17-19]

Optiflex GENESIS IOLs contain a unique covalently bound natural yellow Chromophore, which contains the same UV-A blocking and Violet-Blue Light filtering Chromophore that is in the human crystalline lens. We use nature's own solution to the problem of protecting the retina from harmful energetic light. The absorption spectrum of 3 Hydroxy Kynurenine (Figure 1) shows that this natural compound is an excellent UV-A blocker with a secondary purpose of filtering Violet-Blue Light. This compound and its Beta Glucoside derivatives are nature's primary protection for UV-A and Violet-Blue Light.

Thus, Optiflex GENESIS natural yellow IOLs provide Violet-Blue light filtering similar to a young natural crystalline lens and without altering color perception & contrast sensitivity.

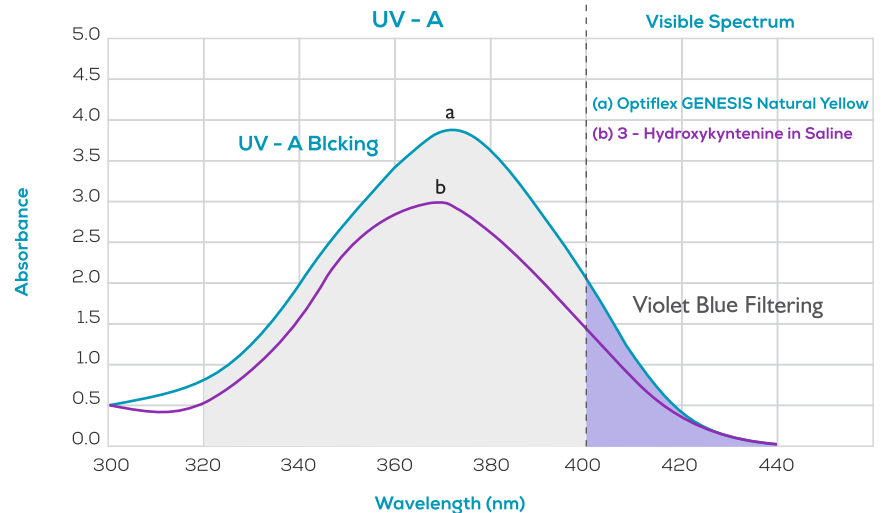


Figure 1: Comparison of 3-Hydroxy Kynurenine in Saline versus Optiflex GENESIS Natural Yellow IOL

## Improvement in Scotopic Vision [14-16]

Scotopic vision is the vision of the eye under low light conditions. In the human eye, cone cells are nonfunctional in low light. Scotopic vision is produced exclusively through rod cells which are most sensitive to wavelengths of light around 498 nm (Green-Blue). The below mentioned graph shows that the quality of the scotopic vision is at its peak for the visible spectrum ranging from 450 nm to 550 nm. The quality of scotopic vision decreases by filtering healthy Blue Light of 440 nm to 500 nm. Whereas, Optiflex GENESIS IOLs through its unique Natural Yellow Chromophore filters 400 nm to 440 nm of Violet-Blue Light spectrum only, not to affect the quality of Scotopic vision.

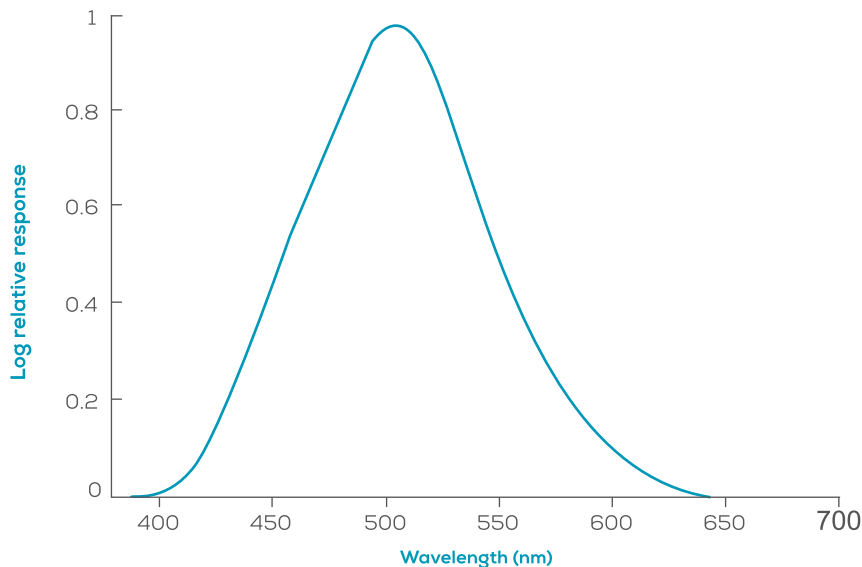


Figure 2: The CIE 1951 scotopic luminosity function. The horizontal axis is wavelength in nm.

## Circadian Rhythm [01-05]

- In humans, Melatonin is produced by the Pineal Gland, a small endocrine gland located in the center of the brain but outside the blood-brain barrier. The Melatonin signal forms part of the system that regulates the sleep-wake cycle by chemically causing drowsiness and lowering the body temperature
- Production of Melatonin by the Pineal Gland is inhibited by light to the Retina and permitted by darkness. Its onset each evening is called the Dim-Light Melatonin Onset (DLMO)
- It is principally Blue Light, between 460 to 480 nm, that suppresses Melatonin, proportional to the light intensity and length of exposure
- By filtering Blue Light ranging up to 500 nm, secretion of Melatonin increases & ultimately disturbs the Circadian Rhythm
- Biotech uses Natural Yellow Hydrophobic material from Benz Research & Development (US Patent 7,947,796) to manufacture Optiflex GENESIS natural yellow lenses which blocks UV-A & filters Violet-Blue spectrum of light ranging from 400nm to 440 nm and doesn't affect Circadian Rhythm



## Chromatic Aberration: Relation with ABBE No. [06\_13]

ABBE No. is the significance of the Chromatic Aberration which could rise by the material used to manufacture the IOL.

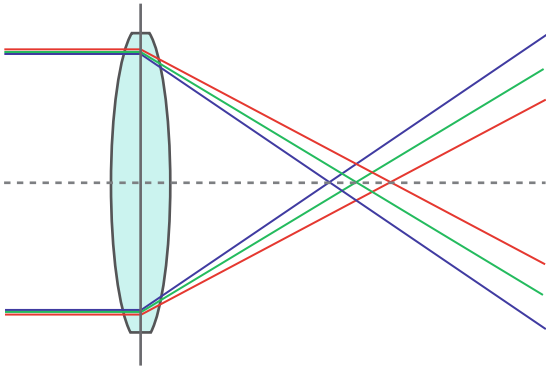


Figure 3: Chromatic Aberration results through IOL material having lower ABBE No.

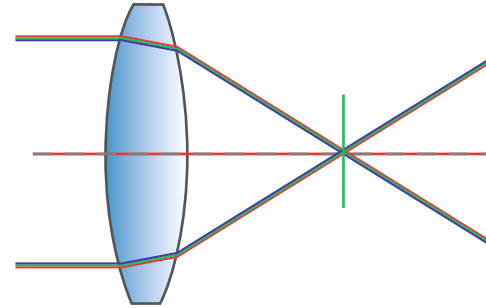


Figure 4: Reduced Chromatic Aberration IOL material having low ABBE No. through IOL material having higher ABBE No.

Optiflex GENESIS IOLs are manufactured using Natural Yellow Hydrophobic material having ABBE No. of 47. This results in the decreased amount of Chromatic Aberration & provides excellent visual outcomes postoperatively.

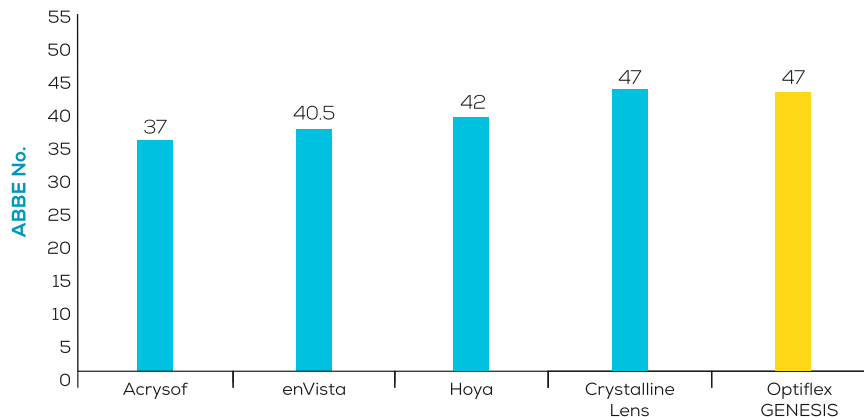


Figure 5: High ABBE No. indicates low degree of Chromatic Aberration

Figure 6, 7, 8: The simulated point spread function and image in the eye on Retinal plane with Negative Spherical Aberration IOL (Fig. 6), with Zero Spherical Aberration IOL (Fig. 7), and with Conventional Spherical IOL (Fig. 8)

Figure 6

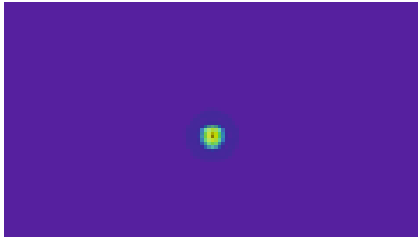


Figure 7

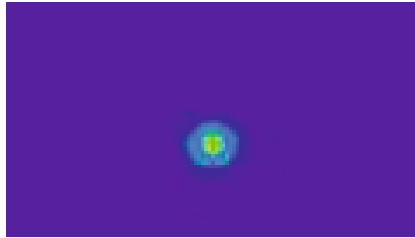
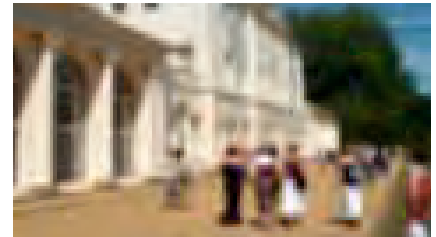
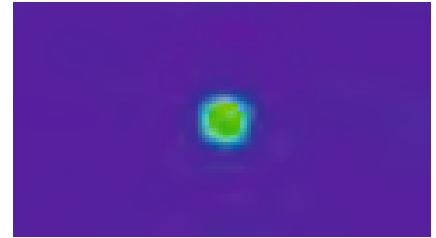


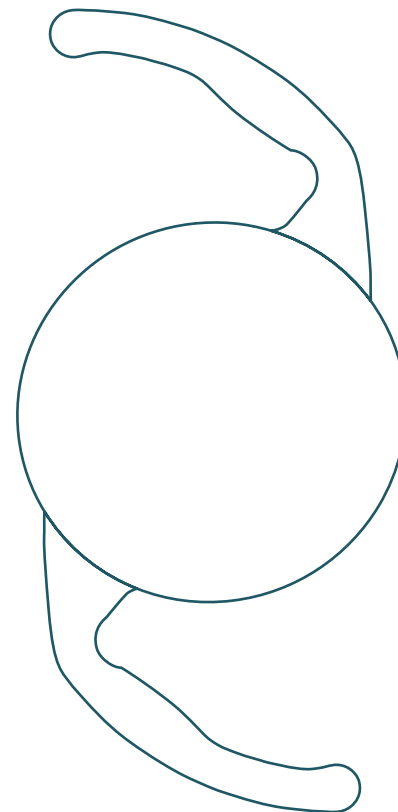
Figure 8



## SPECIFICATIONS

MATERIAL	Hydrophobic Acrylic containing Natural Yellow Chromophore		
OPTIC TYPE	Single Piece, 360° Square Edge with Aspheric Optic		
OPTIC SIZE	6.00 mm		
OVERALL SIZE	13.00 mm		
ANGULATION	0°		
ACD	5.28		
REFRACTIVE INDEX	1.52		
RECOMMENDED ULTRASOUND A-CONSTANT	SRK-T 118.45		
RECOMMENDED OPTICAL A-CONSTANTS	SRK - T 118.85	SRK - II 119.21	Holl 1 Const SF : 1.64
	HOFFER Q ACD : 5.42		HAIGIS a0:1.210, a1:0.40, a2:0.10
	Olsen ACD: 4.62		Barrett : 1.80
DIOPTRER RANGE	+5.0 D to +30.0 D ( with 0.5 D steps )		
IMPLANTATION SITE	Capsular Bag		
STERILIZATION	Irradiation		
SHELF LIFE	4 years from date of manufacture		

## Model: MFA6



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