Intensity

By Hanita Lenses

Vision Redefined

HANITA Lenses

INSIGHTFUL INNOVATION

About

Hanita is a global leader in innovative solutions for cataract surgery.

Intensity lens employs Dynamic Light Utilization technology for maximal light efficiency that transcends the traditional boundaries of conservative diffractive IOL patterns, bringing unprecedented vivid vision to cataract patients.
A revolution in ophthalmic optics, Intensity IOL - as its name suggests - enables intensified vision with far, intermediate and near visual acuity with no compromise at any distance from infinity to 40 cm.
Intensity increases quality of life for cataract patients enabling them to perform the full range of day to day activities.

Vision Redefined

Intensity combines four core elements that together revolutionize and redefine vision for cataract patients and their surgeons.

A new generation of presbyopia correcting IOL with maximum light intensity utilization for clear vision throughout the whole range of functional vision

Dynamic Light Utilization Technology based on Hanita Lenses proprietary algorithm

Smooth & symmetrical 5 foci distribution and 12 steps in different heights

Pupil aperture optimization

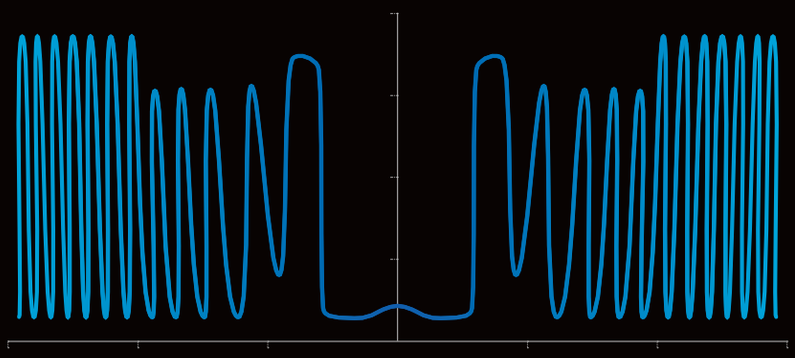
Dynamic Light Utilization	Smooth lens profile	Optimal light distribution	Best light utilization	Continuous vision	High quality	Minimal Side effects

Intensity technology

Minimal side effects. Maximum quality. Continuous functional vision range.

Accurate Polish-Free Production Process

The Intensity lens is manufactured using a proprietary lathe process designed to enable maximum accuracy of both the lens profile and its diffractive rings. Through this lathe process, the lens reaches optimal sharpness and is an identical replica of the profile design for maximal contrast sensitivity.



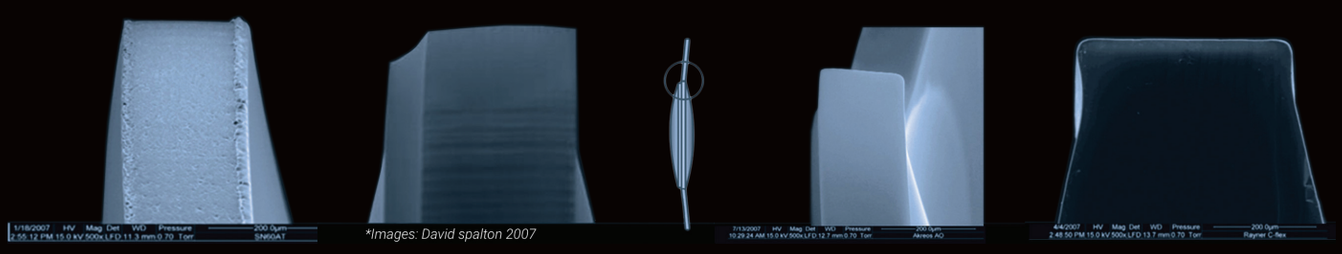
Lens radius [mm]

Lens Profile

The lens has a special profile that enables the creation of continuous, uninterrupted vision throughout the entire vision range. The profile is built of smooth shapes with a total of 12 steps with a central ring in 1mm diameter. Step heights vary along the lens radius with a maximum step height 3.6 microns.

Sharpest Square Edge

The novel manufacturing technology enables to achieve exceptionally sharp 360° square edge, proven to be effective against PCO along with a wide-angle contact with the capsular bag.

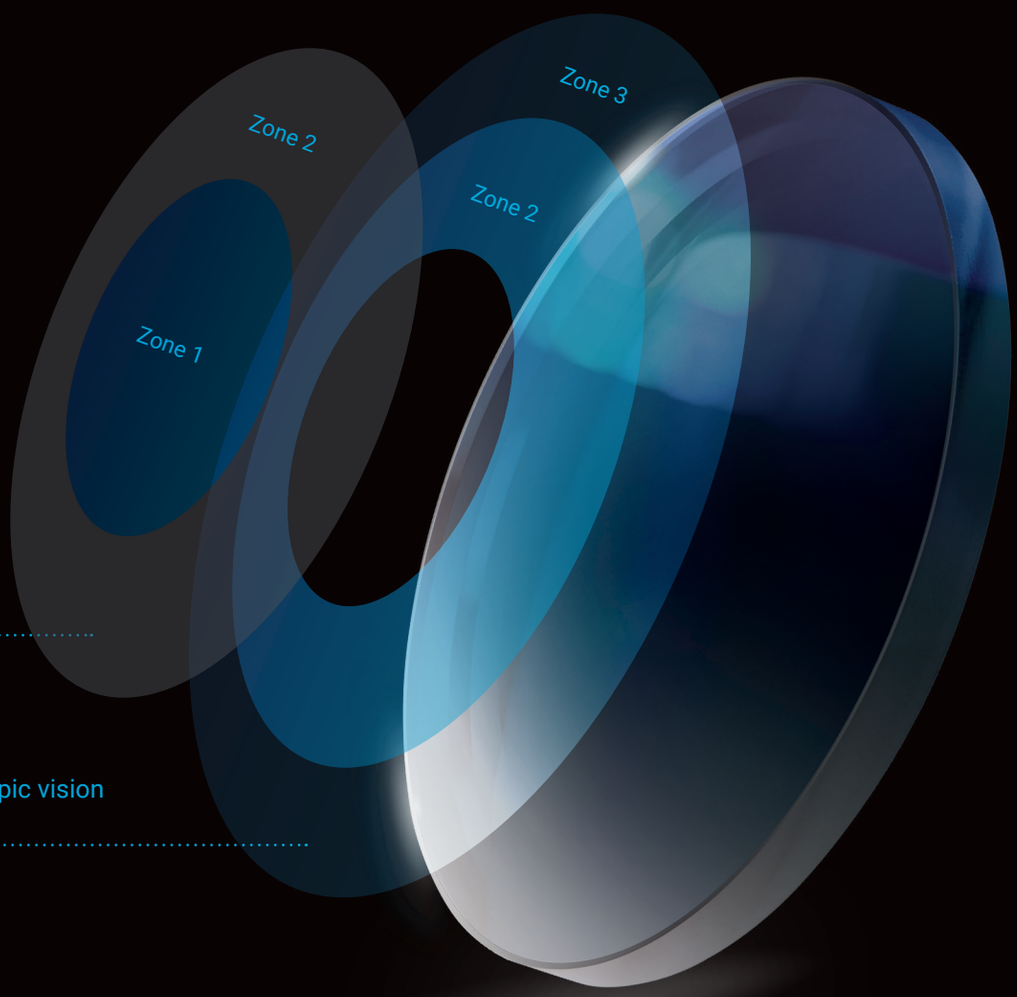


*Images: David spalton 2007

SN60AT* | Intensity | AKREOS AO* | C-Flex

Pupil Aperture Optimization

The lens profile consists of three zones, each of which is optimized by the Dynamic Light Utilization algorithm. Multiple areas allow for better performance, diverse pupil sizes and all lighting conditions. The special division of zones, derived from the Dynamic Light Utilization Algorithm, helps to obtain higher MTF values at far vision for large pupils.



Zone 1+2
Photopic vision
0 - 4 Diameter

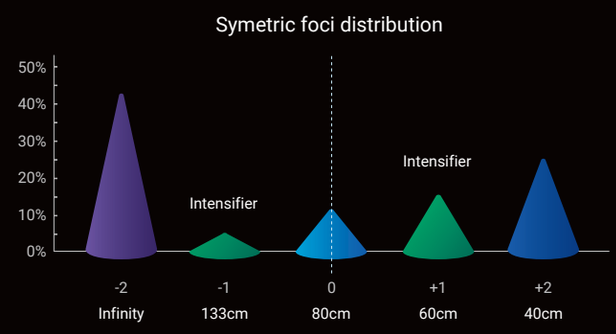
Zone 2+3
Mesopic and Scotopic vision
2.5 - 5.2 Diameter

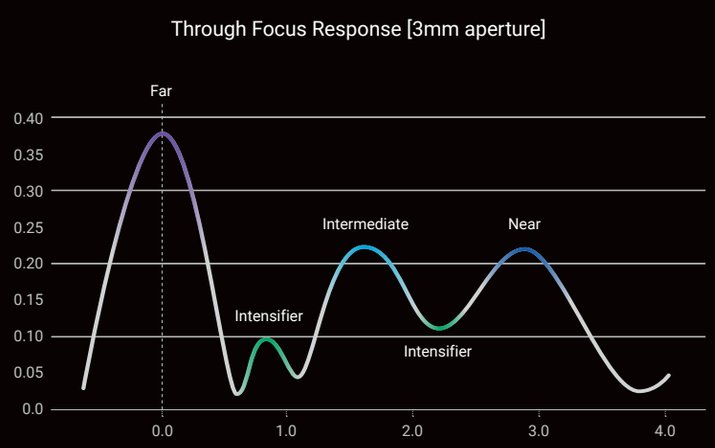
Dynamic Light Utilization (DLU)

Intensity's proprietary iterative algorithm works on a concept of multiple loops between target plane and source plane in order to maximize light intensity utilization. It proposes phase solutions at the source plane in order to get the desired target intensity and results.

Optimal Light Distribution

Intensity is the first lens with a Symmetric foci distribution around the zero order. Based on a unique proprietary design developed using the Dynamic Light Utilization algorithm, the modulated transfer function (MTF) is increased in the area between far-intermediate and intermediate to near, enabling a continuous defocus curve.

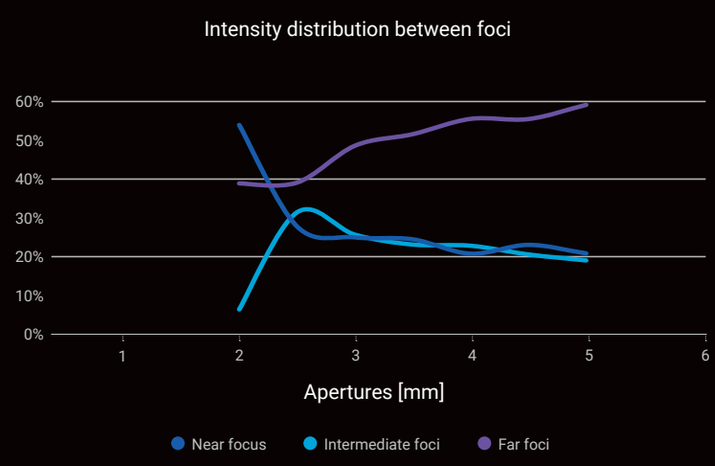




Through Focus Response

The through focus response represents MTF values in the vertical axis and the position of diopters in the horizontal axis. MTF is used to obtain information on the ability of a given IOL to transfer detail from an object to an image in a certain resolution.

* 5 foci of the lens, far intermediate and near. Intensifiers are 0.9D and +2D.

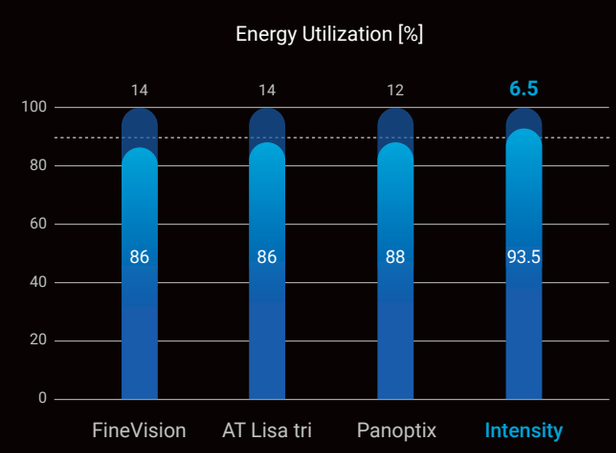


Distribution between foci

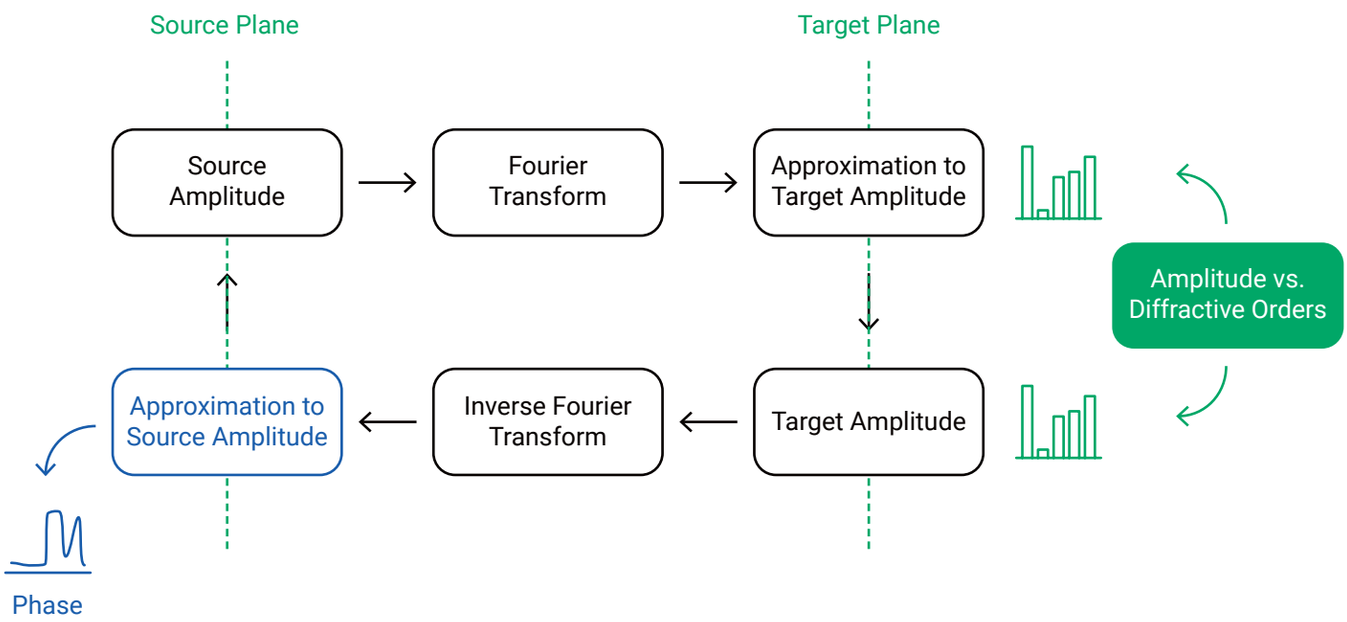
According to the light distribution in different apertures employing the Dynamic Light Utilization technology the near focus intensity does not compromise the far and Intermediate foci, the lens achieves an optimal light distribution between foci.

Maximum Light Utilization

The lens profile is highly energy efficient with 46% less energy lost in comparison to competing lenses, potentially decreasing visual disturbances and intensifying vision in patients' daily life.

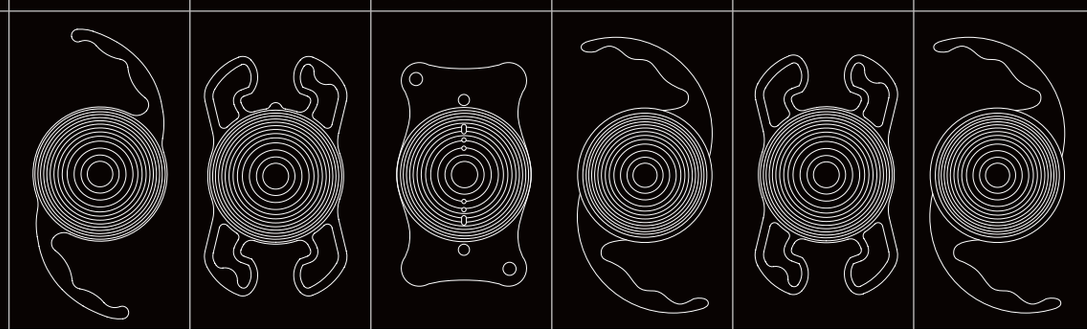


Dynamic Light Utilization



Lens specification

Intensity optimized DLU algorithm

Lens model	INTENSITY SL	INTENSITY BN	INTENSITY Toric	INTENSITY SL HP	INTENSITY BN HP	INTENSITY Toric HP
Drawing						
Description	Posterior chamber IOL					
Total diameter	13mm	11mm	11 mm (>16D) 11.5 mm (≤16D)	13 mm	11mm	13 mm
Optic diameter	6 mm					
Angulation	5°		0°	5°		
Power range	10.0D to 30.0D (0.5D increments)		10 to 30D (0.5D increments)	+17.5 to +27 (0.5D increments)		+19.5 to +27 (0.5D increments)
Cylinder range			Powers 10 -20.0: 1, 1.5, 2.25, 3.0 Powers 20.5-30.0: 1, 1.5, 2.25, 3.0, 3.75, 4.5			1
Addition powers	+1.5, +3					
Optic design	Posterior surface: Aspheric - Diffractive Anterior surface: Spherical/Toric Pupil aperture optimized					
Material	Hydrophilic acrylic 25% water			Hydrophobic acrylic glistening free		
Refractive index	1.46 (hydrated @ 35°c)			1.48 (hydrated @ 35°c)		
A-Constant	118.4	118.4	117.45	-	-	-
Sterilization	Steam			ETO		
Spherical aberration	-0.13µ					
Light filtration	Natural Yellow Violet Filter					

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