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Sezione di Oftalmologia
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Risultati refrattivi e qualità ottica dopo impianto bilaterale di IOL diffrattiva asferica AT LISA tri 839 MP

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CARATTERISTICHE ZEISS AT LISA tri



AT LISA tri 839MP preloaded

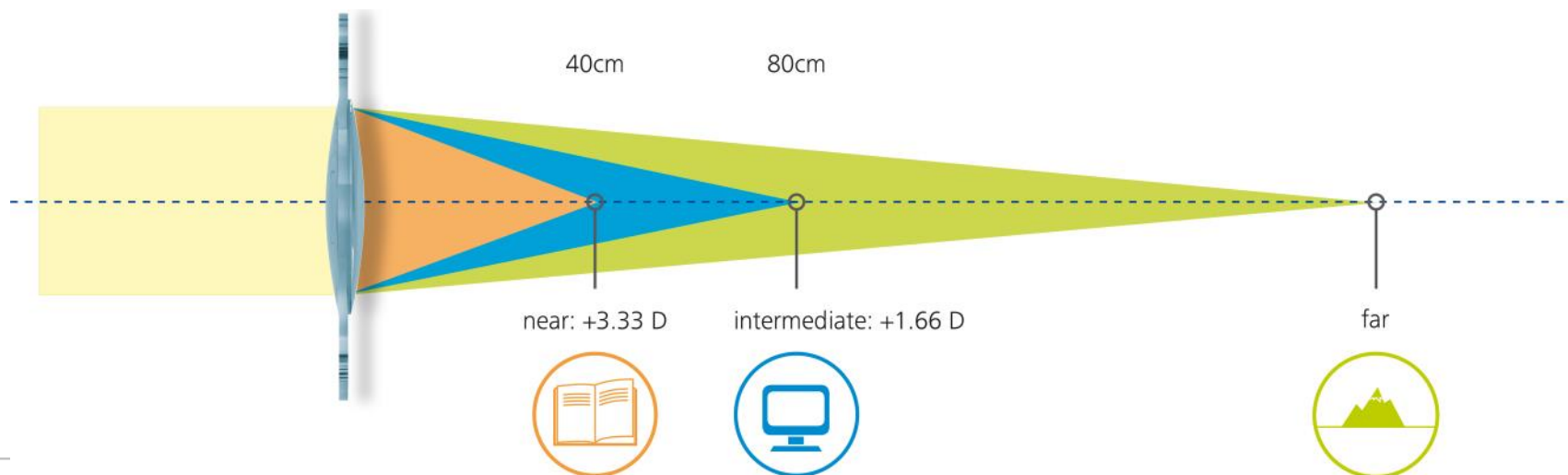
Optic Design	Trifocal, diffractive, +3.33 D near add and +1.66 D intermediate add at the IOL plane, aspheric (aberration correcting)
Material	Hydrophilic acrylic (25 %) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece, MICS
Incision Size	1.8 mm
Company Labeled A-Constant ¹	118.6
Diopter Range	0.0 to +32.0 D, 0.5 D increments
ACD	5.32
Implantation in	Bag
Injector / Cartridge Set ²	BLUEMIXS 180
Indications	Presbyopia correction in patients with or without cataract (Prelex or CLE)

¹ Please refer to our web pages for optimized A-Constants.

² Please refer to our web pages for the most up-to-date references.

CARATTERISTICHE INNOVATIVE ZEISS AT LISA tri

- Tre punti focali per una reale visione a distanza intermedia
- La zona ottica della ZEISS AT LISA tri 839MP fornisce addizione di +3.33 D per una confortevole lettura e addizione intermedia di +1.66 D per le daily activities

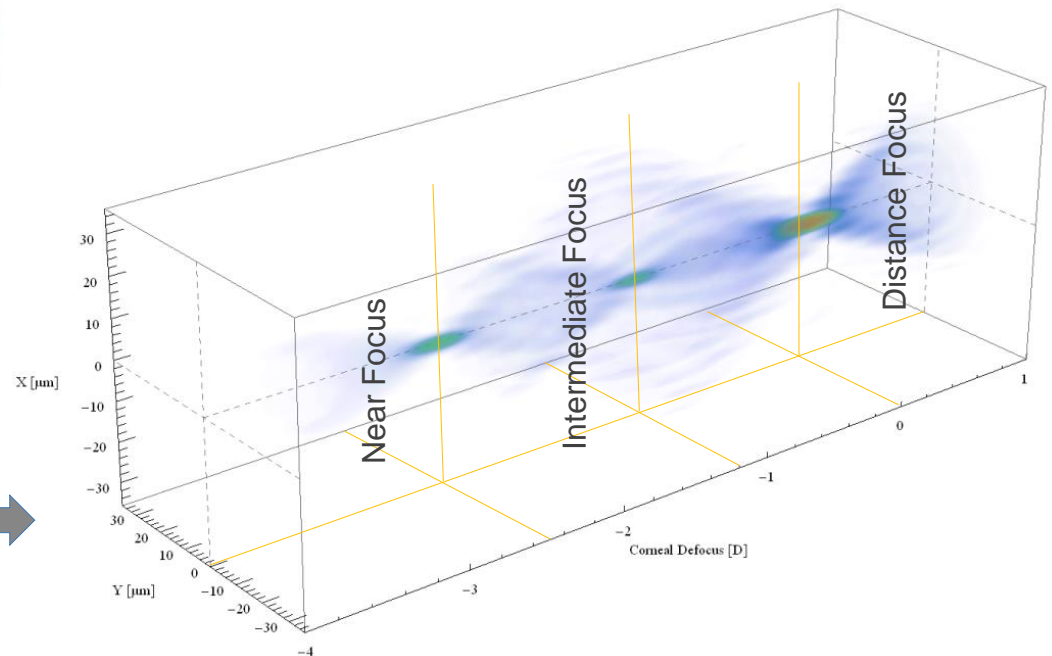


DISTRIBUZIONE 3 PUNTI FOCALI AT LISA tri

L'aggiunta **intermedia di +1.66 D** incrementa significativamente l'acuità visiva a distanza intermedia



AT LISA tri 839 MP



J Refract Surg. 2014 Oct;30(10):666-72. doi: 10.3928/1081597X-20140903-08.

Comparative analysis of the visual performance after cataract surgery with implantation of a bifocal or trifocal diffractive IOL.

Mojzis P, Kukuckova L, Majerova K, Liehneova K, Piñero DP.

Abstract

PURPOSE: To evaluate and compare the visual, refractive, contrast sensitivity, and aberrometric outcomes with a diffractive bifocal and trifocal intraocular lens (IOL) of the same material and haptic design.

METHODS: Sixty eyes of 30 patients undergoing bilateral cataract surgery were enrolled and randomly assigned to one of two groups: the bifocal group, including 30 eyes implanted with the bifocal diffractive IOL AT LISA 801 (Carl Zeiss Meditec, Jena, Germany), and the trifocal group, including eyes implanted with the trifocal diffractive IOL AT LISA tri 839 MP (Carl Zeiss Meditec). Analysis of visual and refractive outcomes, contrast sensitivity, ocular aberrations (OPD-Scan III; Nidek, Inc., Gagamori, Japan), and defocus curve were performed during a 3-month follow-up period.

RESULTS: No statistically significant differences between groups were found in 3-month postoperative uncorrected and corrected distance visual acuity ($P \geq .21$). However, uncorrected, corrected, and distance-corrected near and intermediate visual acuities were significantly better in the trifocal group ($P < .01$). No significant differences between groups were found in postoperative spherical equivalent ($P = .22$). In the binocular defocus curve, the visual acuity was significantly better for defocus of -0.50 to -1.50 diopters in the trifocal group ($P \leq .04$) and -3.50 to -4.00 diopters in the bifocal group ($P \leq .03$). No statistically significant differences were found between groups in most of the postoperative corneal, internal, and ocular aberrations ($P \leq .31$), and in contrast sensitivity for most frequencies analyzed ($P \leq .15$).

CONCLUSIONS: Trifocal diffractive IOLs provide significantly better intermediate vision over bifocal IOLs, with equivalent postoperative levels of visual and ocular optical quality.

J Cataract Refract Surg. 2014 Jan;40(1):80-9. doi: 10.1016/j.jcrs.2013.06.025.

Outcomes of a new diffractive trifocal intraocular lens.

Mojzis P¹, Peña-García P¹, Liehneova I¹, Ziak P¹, Alió JL².

⊕ Author information

Abstract

PURPOSE: To evaluate refractive and visual parameters related to distance, intermediate, and near vision after cataract surgery and the optical quality of a new diffractive trifocal intraocular lens (IOL).

SETTING: Vissum Instituto Oftalmologico de Alicante, Alicante, Spain.

DESIGN: Case series.

METHODS: Patients had bilateral refractive lens exchange and multifocal diffractive IOL (AT Lisa tri 839 MP) implantation. A complete ophthalmology examination was performed preoperatively and postoperatively. The follow-up was 6 months. The main outcome measures were uncorrected distance (UDVA) and corrected distance (CDVA), intermediate, and near visual acuities; keratometry; manifest refraction; and aberrations (total, corneal, internal).

RESULTS: The study comprised 60 eyes of 30 patients (mean age 57.9 years \pm 7.8 [SD]; range 42 to 76 years). There was significant improvement in UDVA, uncorrected intermediate visual acuity, uncorrected near visual acuity, CDVA, and distance-corrected intermediate and near visual acuity. The postoperative refractive status was within the range of +1.00 to -1.00 diopter. Total internal aberrations decreased significantly ($P < .001$).

CONCLUSIONS: The trifocal IOL improved near, intermediate, and distance vision in presbyopic patients. The use of 3 foci provided significant intermediate visual results without sacrificing near or distance vision.

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L Light distributed asymmetrically

tra fuoco per lontano e vicino per incrementare la visione a distanza intermedia e ridurre aloni e abbagliamenti

I Independency from pupil size

grazie all' elevata performance della microstruttura diffrattiva-refrattiva che copre l' intero diametro dell' ottica di 6.0 mm

S SMP technology (smooth micro phase)

per una superficie della lente senza angoli perpendicolari , per un' ideale qualità di immagine che riduce la dispersione della luce

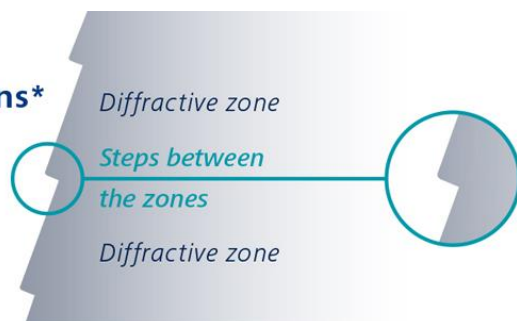
A Aberration correcting optimized aspheric optic

per una migliore sensibilità al contrasto, profondità di fuoco e visione nitida



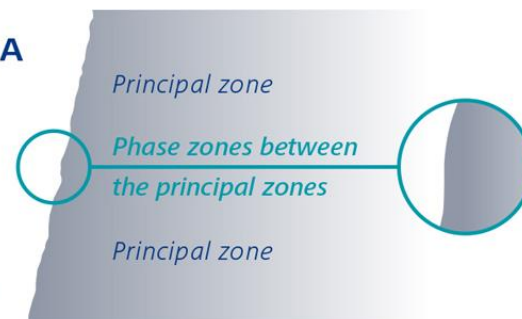
Diffractive lens*

Front profile of a bifocal diffractive lens



ZEISS AT LISA concept*

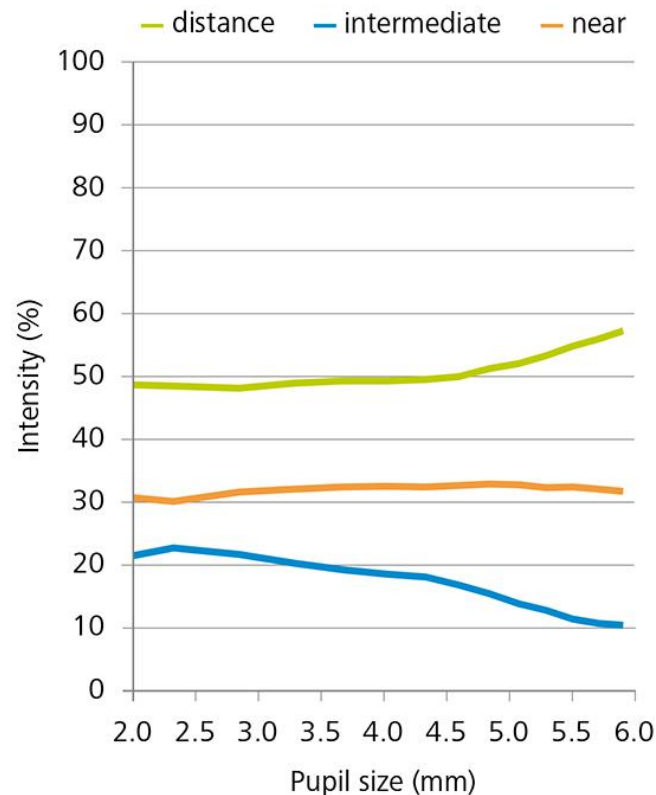
Front profile of a ZEISS AT LISA lens ("smooth steps")



LIGHT DISTRIBUTED ASIMMETRICALLY

Distribuzione asimmetrica della luce incidente del 50%,20% e 30% tra fuoco per lontano, per distanza intermedia e per vicino = più soddisfazioni e prevedibili outcomes visivi per pazienti più giovani con pupille attive.

20 %
30 %
50 %



AT LISA tri asymmetrical light distribution*

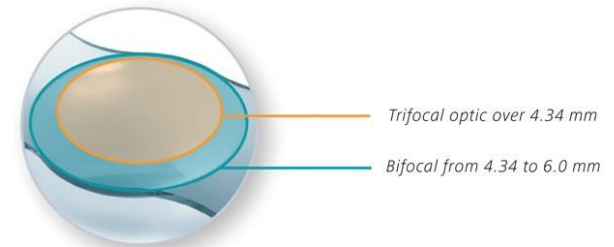
* Data on file.

INDIPENDENCE FROM PUPIL SIZE

Indipendenza diametro pupillare, grazie al design full-diffractive
pupil-independent design della
consente stabili performances visive
sotto tutte le condizioni di luce

Visione notturna “pulita”

Il design ottico con centro trifocale e
periferia bifocale consente
un’ ottima visione notturna.



STUDIO CLINICO

Sono stati selezionati 20 occhi di 10 pazienti affetti da cataratta senile in assenza di altre patologie oculari

8 femmine e 2 maschi

Età media $73,3 \pm 3,8$ anni

Tutti i pazienti sono stati impiantati bilateralmente e operati con tecnica MICS a distanza di 2 settimane tra 1 occhio e l'altro

Nel postoperatorio sono stati sottoposti a misurazione dell'acuità visiva naturale per lontano, a distanza intermedia (80 cm) e per vicino (40 cm).

Mediante l'aberrometro I PROFILER plus ZEISS, sono state misurate in midriasi (5 mm di \emptyset) le aberrazioni sferiche (Z 4,0), l'aberrazione di coma verticale (Z 3,-1) e orizzontale (Z 3,1).



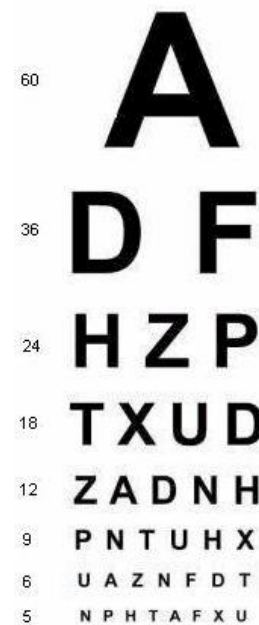
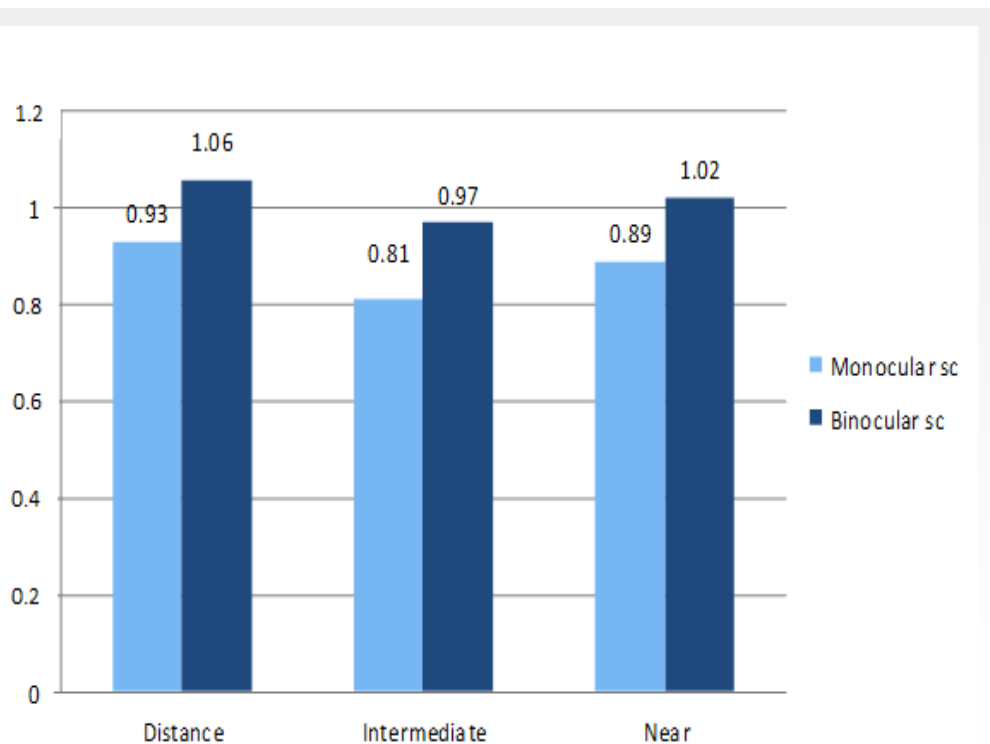
RISULTATI REFRAATTIVI POST-OPERATORI

Dopo 1 mese dall'intervento:

Acuità visiva naturale per lontano media $0,90 \pm 0,06$ (frazione di SNELLEN)

Acuità visiva naturale a distanza intermedia media 20/32 ($0,65 \pm 0,07$)

Acuità visiva naturale per vicino media 20/32 ($J2 0,65 \pm 0,07$)



INCREMENTO AV DOPO IMPIANTO BILATERALE

RISULTATI OTTICI POST-OPERATORI

	ABERRAZIONE SFERICA Z(4,0)	COMA ORIZZONTALE Z(3,1)	COMA VERTICALE Z(3,-1)
TOTALE	0,0782 ± 0,07	0,0158 ± 0,011	0,0818 ± 0,067
CORNEALE	0,137 ± 0,098	0,084 ± 0,06	0,170 ± 0,12
INDOTTA DALLA IOL	0,059 ± 0,0043	0,069 ± 0,045*	0,088 ± 0,063*

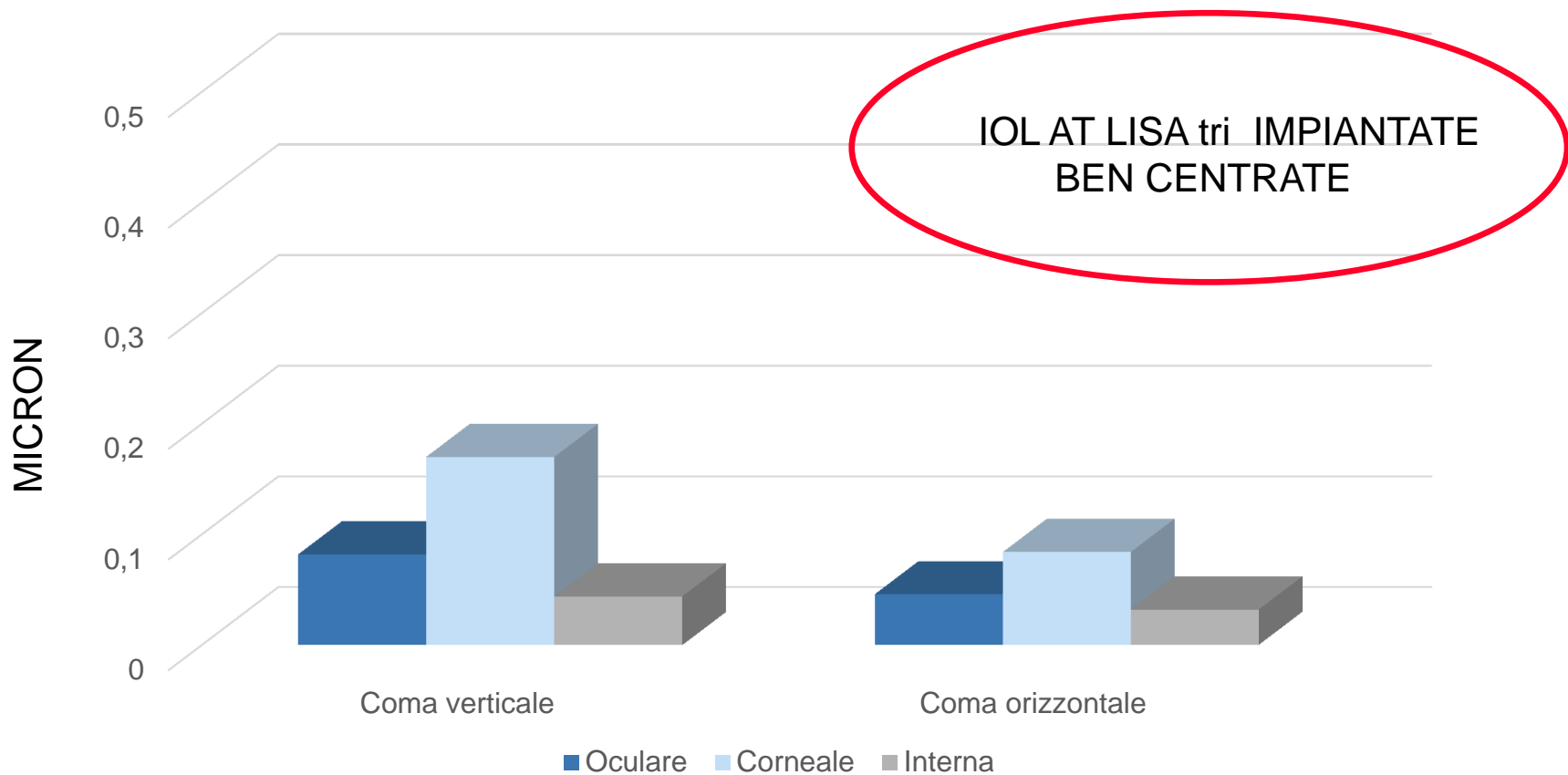
L'aberrazione di coma interna media è risultata un valore molto vicino allo zero, pertanto questi bassi valori riscontrati nel postoperatorio significavano che tutte le IOL impiantate erano ben centrate.

ABERRAZIONE SFERICA POST-OPERATORIA





COMA VERTICALE E ORIZZONTALE POST-OPERATORIE



CONCLUSIONI

ZEISS AT LISA tri 839 MP IOL fornisce un' ottima acuità visiva naturale a varie distanze, soprattutto a distanza intermedia, e dopo impianto bilaterale.

Consente di svolgere un grande spettro di attività senza occhiali e limitazioni.

ZEISS AT LISA tri 839 MP IOL non induce alcuna aberrazione sferica.



.....**GRAZIE**



SALUTI DA PALERMO

