



A NEW APPROACH TO TRIFOCAL LENSES



MEDIPHACOS
Together to see further

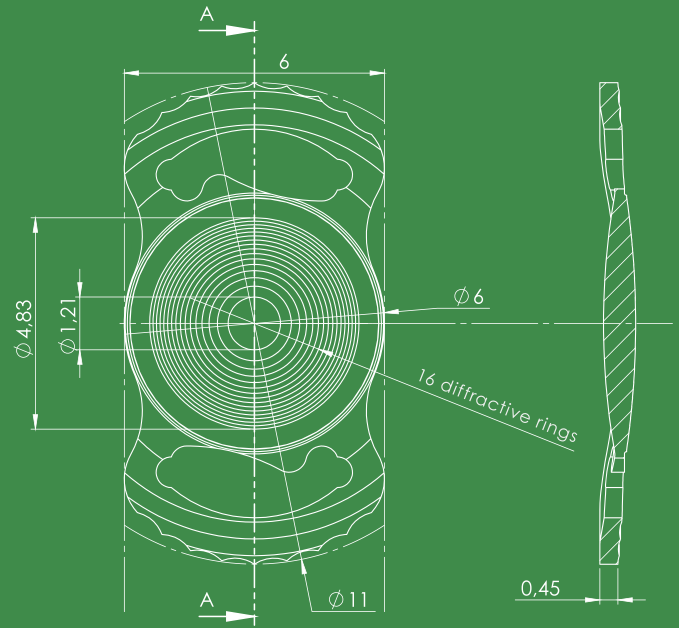


BIOS

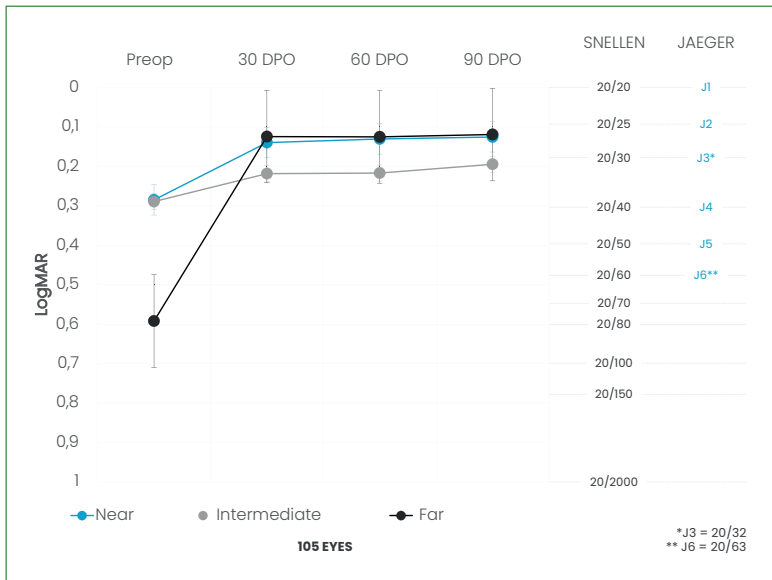
Trifocal

The BIOS Trifocal is the result of an 8-year project entirely developed in Brazil by Mediphacos, combining an innovative platform and a patented diffractive optical design, optimized by artificial intelligence algorithms, ensuring implant stability and excellent visual outcomes at all distances.

ANVISA: 10161020060



Posterior View of the IOL



CLINICAL RESULTS

BIOS Trifocal: A prospective clinical trial conducted on 105 eyes showed significant improvement and visual acuity stability at all distances.

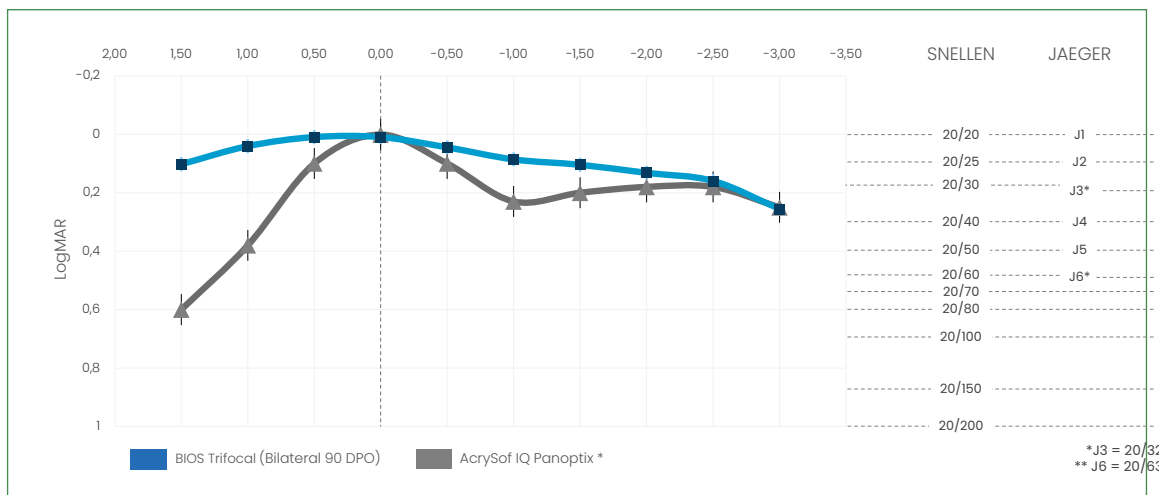
Data on file: **Visual, Clinical and Quality of Life Outcomes of a New Multifocal IOL with Optimized Diffractive Grating**

João Marcelo Gusmão Lyra et al. - CAAE: 30190720.1.0000.5011

(RESEARCH ETHICS COMMITTEE UNIVERSIDADE ESTADUAL DE CIÊNCIAS DA SAÚDE DE ALAGOAS)

Defocus curve:

A comparison between BIOS Trifocal and AcrySof IQ Panoptix* curves shows better visual acuity and increased tolerance to residual refractive error with BIOS Trifocal.



PATENTED OPTICAL DESIGN

Aspheric biconvex optical design with 16 diffractive rings optimized in accordance to the base diopter of the lens, assuring consistent performance throughout the diopter range.

(12) **United States Patent**
De Carvalho et al.

(10) Patent No.: **US 11,324,588 B2**

(45) Date of Patent: **May 10, 2022**

PATENTED ANTI-ROTATIONAL SYSTEM

The saw-shaped haptic edge increases the static friction ratio between the IOL and the equatorial fornix of the capsular bag, providing added resistance against lens rotation.

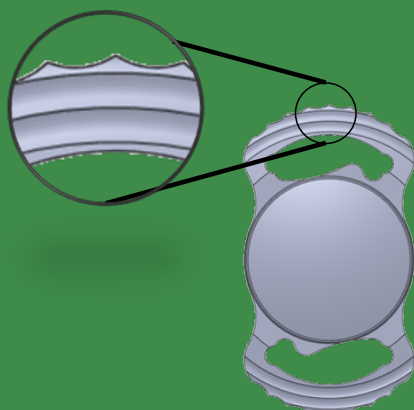


INNOVATIVE HAPTIC PLATFORM

4 junction points, wide capsular contact arc, and damping of forces resulting from capsular shrinkage favor IOL stability.

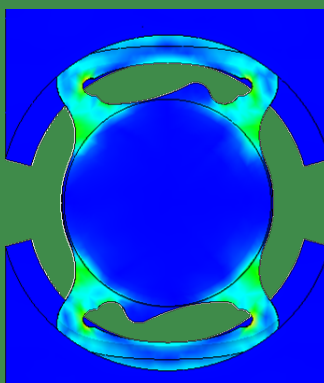
360° SQUARE EDGE

The mechanical barrier against cell migration prevents posterior capsule opacification.



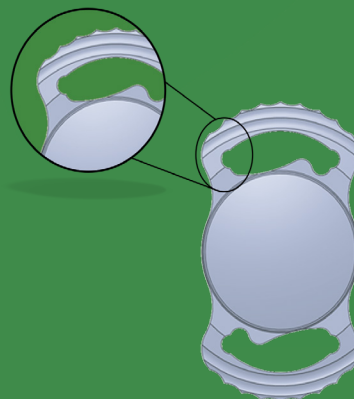
ANTI-ROTATIONAL

The implanted axis will remain in place



CENTRALIZATION

Perfect alignment between the IOL and the visual axis



STABILITY

Avoids tilting and decentration in the long term

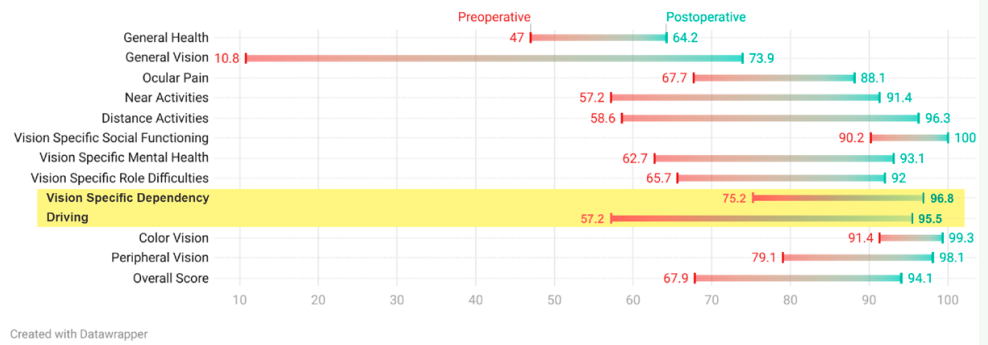
HIGH LEVEL OF PATIENT SATISFACTION

Visual function questionnaire indicates a high level of patient satisfaction, 96.8% of spectacle independence, and 95.5% satisfaction with night driving.

Data on file: **Visual, Clinical and Quality of Life Outcomes of a New Multifocal IOL with Optimized Diffractive Grating**
 João Marcelo Gusmão Lyra et al.
 CAAE: 30190720.1.0000.5011
 (RESEARCH ETHICS COMMITTEE UNIVERSIDADE ESTADUAL DE CIÊNCIAS DA SAÚDE DE ALAGOAS)

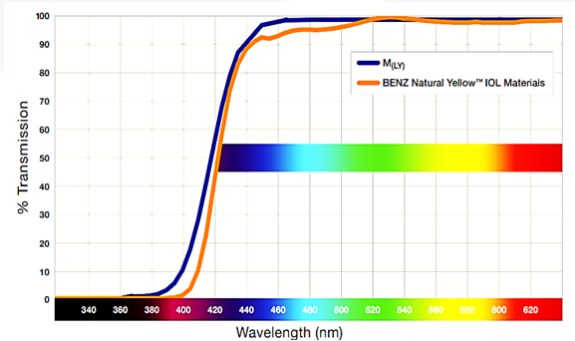
National Eye Institute Visual Function Questionnaire 25 (NEI-VFQ-25)

Scores assigned to NEI-VFQ-25 subscales also increased. Comparative analysis of mean preoperative and postoperative NEI-VFQ-25 scores revealed an increase, indicating statistically significant gains ($p < 0.01$).



MATERIAL: HYBRID ACRYLIC BENZ FLEX 25

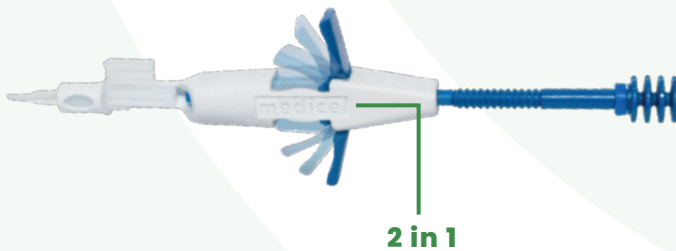
- High pseudoplasticity: compatible to MICS 1.8mm.
- 50 million IOLs manufactured. Zero recalls.
- High transmittance similar to that of a young human crystalline lens.
- ABBE number 58. Less chromatic aberration.
- ZERO IONIC LENS MATERIAL.



USABILITY: NEW INJECTOR ACCUJECT DUAL 1.8 MM

Freedom to select your preferred surgical method: syringe and screw within the same injector.

ANVISA: 10161029009



TECHNICAL SPECS

Material	Hybrid acrylic with UV and yellow chromophore Natural Yellow
Refractive index	1.461
Platform	Single-piece with closed loop haptic design
Optical zone diameter (mm)	6.0
Total length (mm)	11.0
Incision size	≥ 1.8 mm
Position	Capsular bag
Haptic angle	5°
Edge	360° square
Optical design	Refractive aspheric anterior and diffractive spheric posterior 16 diffractive steps Diameter of the central area: 1.21mm
Diopter power	Base power +10 to +30 D. in 0.5 D increments. Trifocal: +3.0 D. for close vision and +1.5 D. for intermediate distances

BIOMETRY

A Constant (manufacturer)	118.0
ACD (manufacturer)	4.96
A Const. (SRK II)	118.10
A Const. (SRK/T)	118.00 optical 117.8 ultrasound
Haigs α0	0.621
Haigs α1	0.400
Haigs α2	0.100
HofferQ pACD	4.86
Holladay SF	1.07
Barrett Universal II Lens factor	1.34



Facebook Instagram YouTube @mediphacos