



CUTTING EDGE
sense of innovation

Synthesis[®] ⊕

EDOF (Enhanced Depth of Focus)



What is
the plus?



CUTTING EDGE, a French group experienced in Surgical Ophthalmology, with operations in key European markets, develops and manufactures **Synthesis[®] (+)** a novel **EDOF** intraocular lens.

Synthesis[®] (+)



Synthesis[®] (+) was engineered by a Research and Development team experienced and dedicated to design, prototype and manufacture high-quality intraocular lenses.

Synthesis[®] (+) is manufactured in France in the Cutting Edge state-of-the-art facility and honours quality standards **(ISO 13485)** of the medical industry.

Synthesis[®] (+) optimizes the main optical parameters allowing surgeons to offer their patients improved social vision.

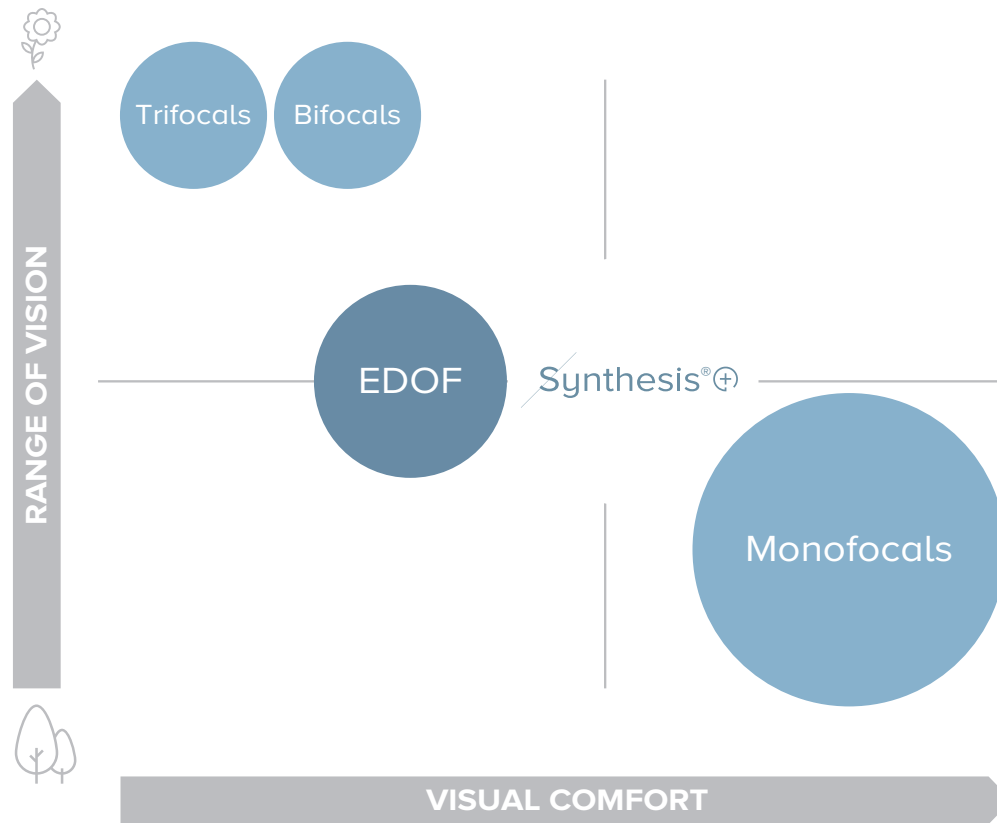
Synthesis[®] (+) and **Synthesis[®] monofocal** offer a complementary range of preloaded IOLs (clear, yellow) for micro incision cataract surgery.



CUTTING EDGE

Synthesis[®] ⊕

CHOOSING THE RIGHT LENS: WHICH ALTERNATIVES?

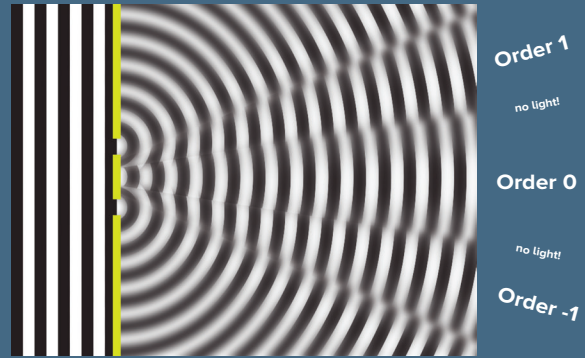
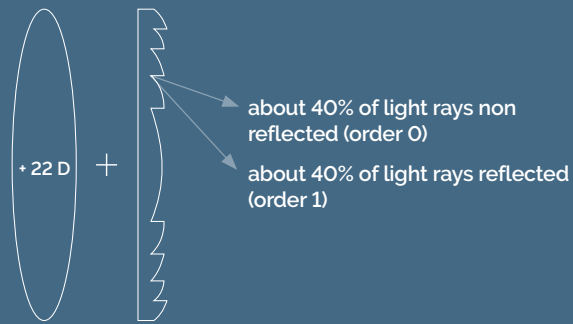


MULTIFOCALS FREQUENT SIDE EFFECTS^(1, 2, 3)

- Blurry vision
- Halos
- Glare
- Ghost images
- Dissatisfied patients

DIFFRACTIVE MULTIFOCALS

SOME OPTICAL LIMITATIONS



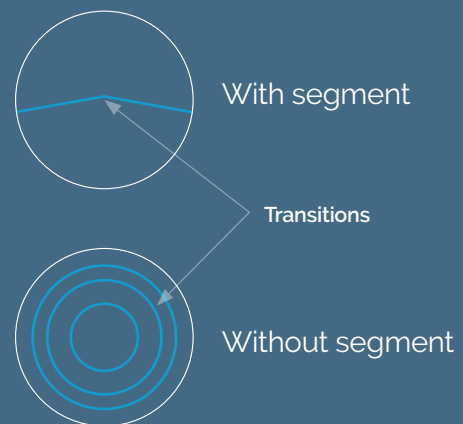
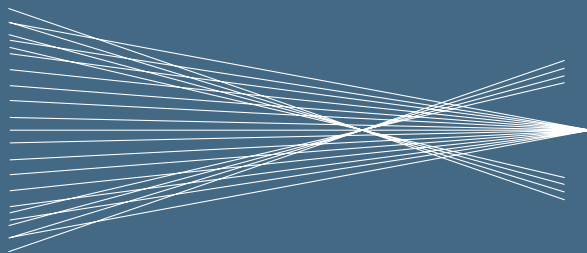
DISADVANTAGES⁽¹⁾:

- Loss of incident light (18%)
- Loss of contrast
- Unwanted optical effects

ADVANTAGES⁽¹⁾

- Near vision

REFRACTIVE MULTIFOCALS



2 DIFFERENT CONCEPTS

DISADVANTAGES

- Light loss due to transitions⁽⁸⁾

EDOF A NEW CATEGORY

New generation of lenses provides distance vision and enhanced intermediate vision.

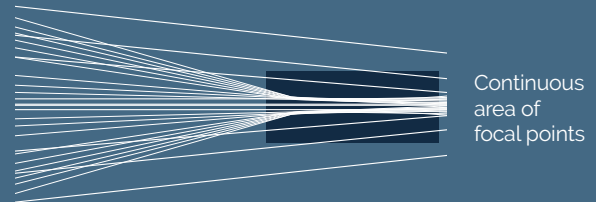
DISADVANTAGES⁽³⁾

- Less strong near vision

ADVANTAGES⁽³⁾

- Greater contrast sensitivity
- Lower incidence of dysphotopsia

DEPTH OF FOCUS IOL



RANGE OF VISION



Near Vision



Distance Vision

ZONE 1
30 - 50 cm



ZONE 2
50 cm - 1 m



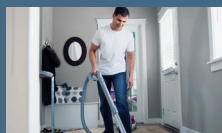
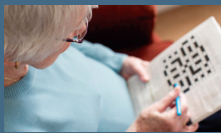
ZONE 3
2 - 6 m



ZONE 4
6 - 30 m



ZONE 5
30 m



Near/Intermediate

Distance

Social vision

OPTICAL QUALITY

AN INNOVATIVE OPTICAL DESIGN

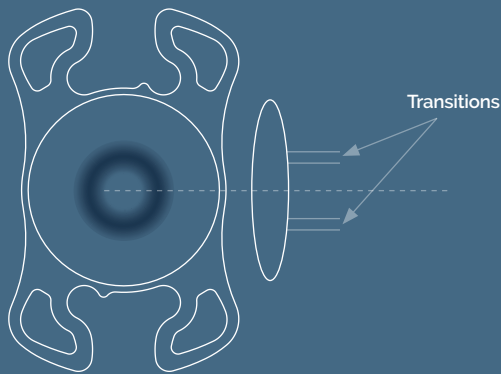
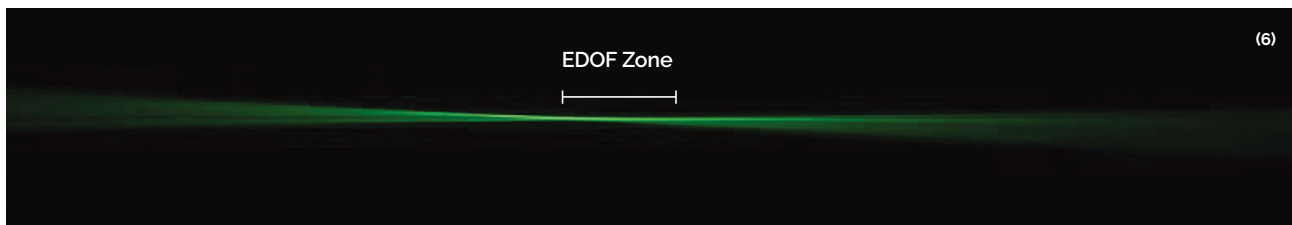
Continuous area with an EDOF central zone, a transition zone and monofocal optical periphery.

4th and 6th spherical aberrations of opposite signs permits depth of field increase^(4,5).

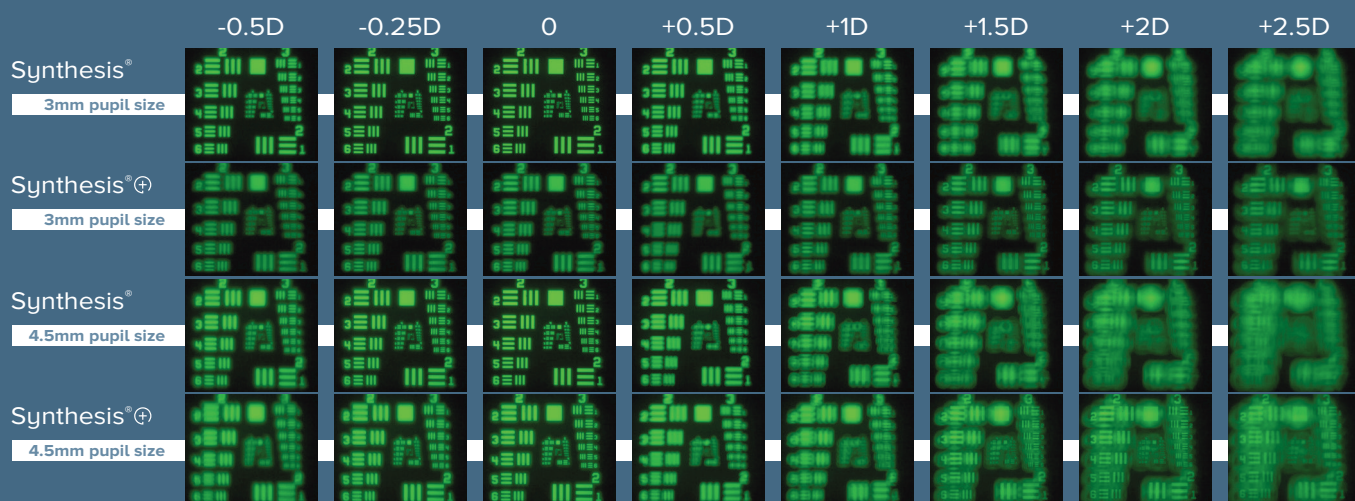
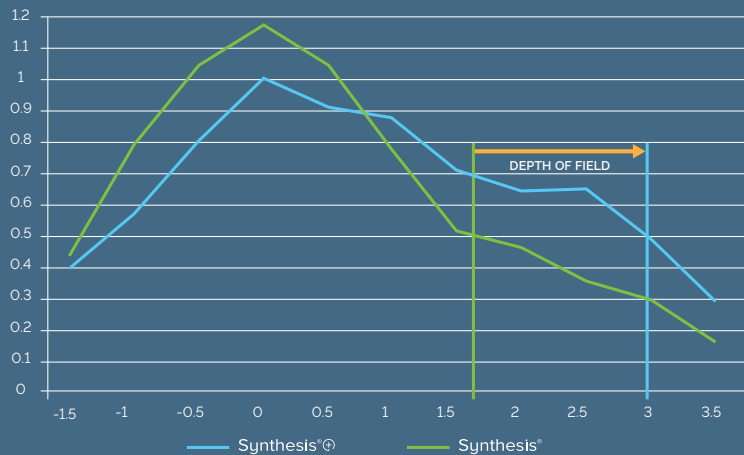


Patented transition zone under
N° EP 18 1771 92

SYNTHESIS® (+) RAY TRACING



DEFOCUS CURVE⁽⁷⁾



Computerised simulations[®].

SAFETY

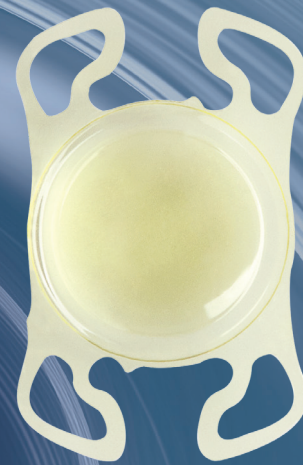
MATERIAL

- Acrylic copolymer with ultraviolet absorption successfully used for more than 18 years.
- Optional clear or blue-light-filtering lenses

DESIGN

- 4 point fixation haptics
- Enhanced C-Edge+ <5microns 360° square edge
- Orientation notch at the optic edge

Preloaded **1.6mm**



Synthesis® ⊕

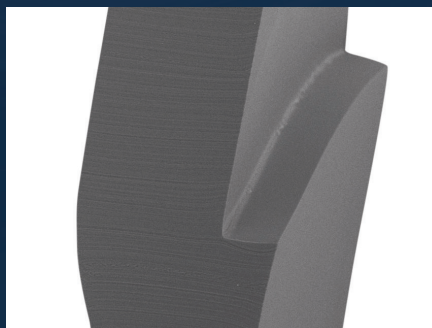
C-EDGE+ SCANNING ELECTRON MICROSCOPY IMAGES

MAGNIFICATION 50 X



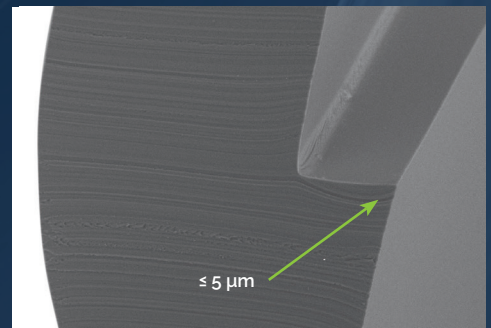
2 mm

MAGNIFICATION 200 X



500 μm

MAGNIFICATION 500 X



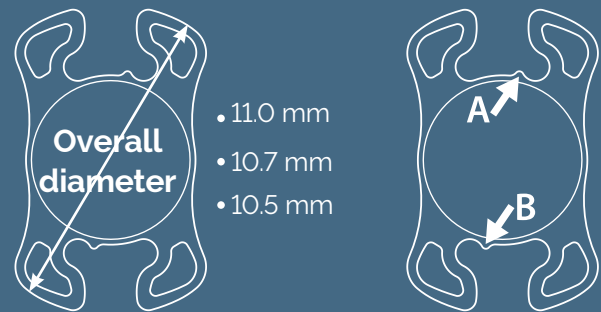
200 μm

REPRODUCIBILITY

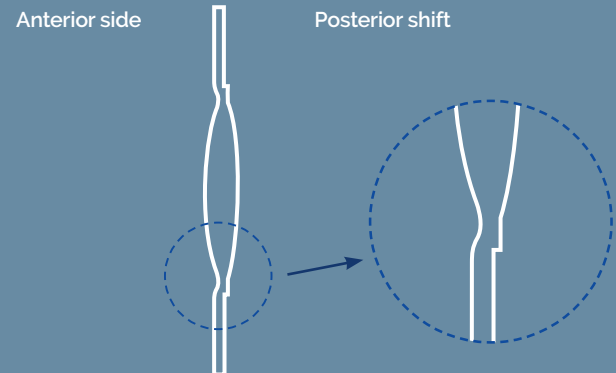
OPTIC

- **6 mm optic** across the power range
- **3 overall diameters** to fit the capsular bag:
 - 11.0 mm: from 0.00D to +15.00D
 - 10.7 mm: from: +15.25D to 22.00D
 - 10.5 mm: +22.25D to +32.00D
- **Orientation notch** at the optic edge
- **Posterior shift:** vaulted design for excellent capsular bag adhesion
- **Homogeneous surface** across the power range for consistent injection forces regardless of IOL diopter⁽¹⁰⁾.


From 0.0D to 10.0D (0.5D increments)
From 10.25 to 32.0D (0.25D increments)



1.6 mm PRELOADED
MICS ready



INJECTION SYSTEM

		Brands	References	Wound-assisted recommended incision	In-the wound recommended incision	In-the-bag recommended incision
	Preloaded	Medicel Accujet™ PRO 1.6	LP604550P (box of 10)	1.6 mm	1.8 mm	2.0 mm

LOADING GUIDE

Synthesis[®] (+)

EDOF

PRELOADED

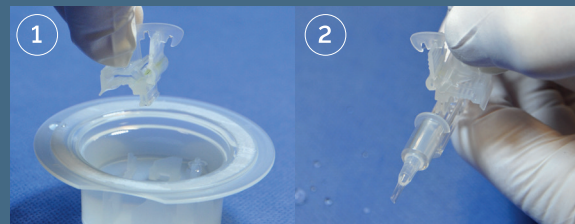
References

PRELOADED

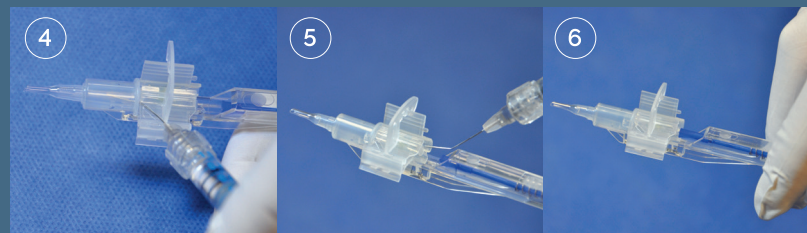
Clear
Yellow

PPLUS
PYPLUS

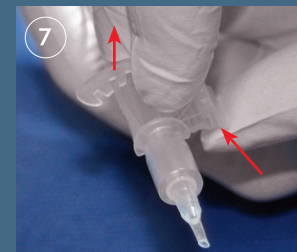
- 1 Open the container; remove the loading cartridge that contains the IOL from the container by pulling on the armature taking care not to remove the protective clip.
- 2 Insert the loading cartridge into the injector body until it locks into position.
- 3 Carefully rinse the lens with balanced salt solution.



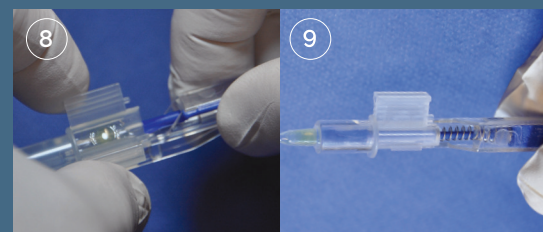
- 4 Through the filling hole, fill the cartridge tunnel with viscoelastic.
- 5 Fill a small amount of visco behind the lens at the rear of the loading chamber.
- 6 Push the plunger until the silicone tip approaches the rear of the loading chamber.



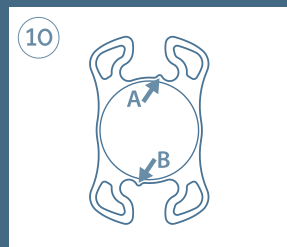
- 7 Carefully remove the clip from the loading chamber:
 - Grab the armature with two fingers while rotating the bottom hinge upwards with the thumb
 - Lift vertically.



- 8 Check that the lens is correctly positioned and close the wings of the loading chamber. When loaded correctly, you will hear a "click" sound.
- 9 Push the plunger to position the implant in the cartridge's tunnel. The system is ready for injection.



- 10 Once implanted, the orientation features of the Synthesis (+)'s implant must be oriented at the top right (A) and at the bottom left (B).



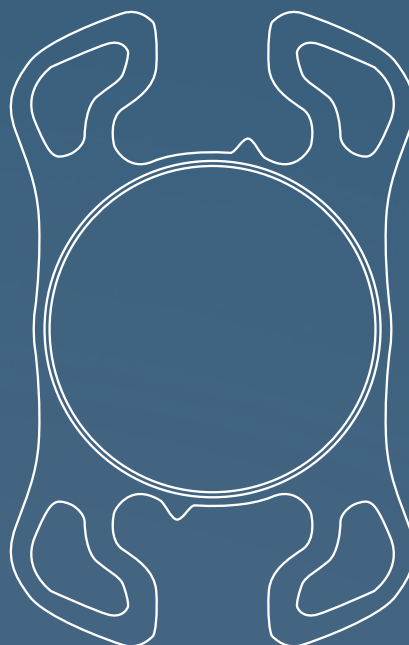
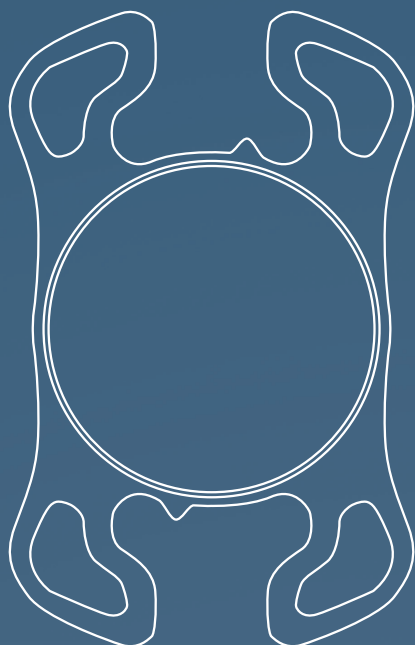
Reserved for health care professionals. Please refer to the operating instructions.

TECHNICAL SHEET

Synthesis[®] ⊕ EDOF

DESIGNATION	SPECIFICATIONS
Optic diameter	6 mm across the power range (0.0 D to +32.0D)
Diopter Range	0.5 increments between 0.00D to +10.00D 0.25 increments between +10.25D to +32.00D
Ordering information	Quarter diopters in stock between +16.25D to +26.00D. (outside this range, quarter diopters available with a 4 weeks lead-time)
Overall diameter	11.0 mm: from 0.00D to +15.00D 10.7 mm: from +15.25D to +22.0D 10.5 mm: from +22.25D to 32.0D
Design	4 point-fixation, C-Edge+ ≤ 5 microns
Angulation	0°, posterior-shift feature
Biometry	SRK/T: A = 118.66 Haigis: aO = 1.107 (with a1 = 0.4 & a2 = 0.1) Hoffer-Q: pACD = 5.336 Holladay 1: SF = 1.59
References	Synthesis+ CLEAR preloaded: PPLUS Synthesis+ YELLOW preloaded: PYPLUS

ENHANCING THE SOCIAL VISION OF YOUR CATARACT PATIENTS AND IMPROVING WELLBEING



Synthesis[®]
Acrylic Monofocal

Synthesis[®] ⊕
EDOF

A range that makes sense

PRELOADED | YELLOW | CLEAR | MONOFOCAL | ED OF



SENSE OF EXCELLENCE
SENSE OF INNOVATION
SENSE OF PARTNERSHIP
SENSE OF ETHICS

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- (2) De Vries NE, Webers CA, Touwslager WR et al. Dissatisfaction after implantation of multifocal intraocular lenses. *J Cataract Refract Surg*. 2011. 37(5):859-65
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- (5) Benard Y, Lopez-Gil N, Legras R. Optimizing the subjective depth-of-focus with combinations of fourth- and sixth-order spherical aberration. *Vision Res*. 2011. 51(23-24):2471-7
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- (8) Rosen E, Alió JL, Dick HB et al. Efficacy and safety of multifocal intraocular lenses following cataract and refractive lens exchange: Metaanalysis of peer-reviewed publications. *J Cataract Refract Surg*. 2016. 42(2):310-28
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- (10) Internal report FE18-013.