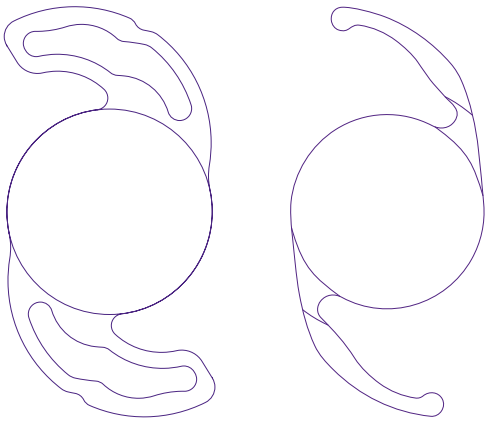
ophtec



Go Optics

Clinical science compendium

ophtec.com

Introduction

At Ophtec we believe that high quality scientific research and evidence is essential to provide the health care community with trustworthy knowledge and experience regarding new technology. In this sense, we are committed to generating and communicating high-quality scientific facts to the eye care professional community.

The Go optic is an innovative optical design developed by Ophtec and incorporated into the Precizon Go and Horizon Go intraocular lenses. Designed to extend the range of focus, it enhances intermediate vision while maintaining excellent overall visual performance.

This compendium brings together the current scientific evidence on the performance of the Go optic. It summarizes findings from research studies conducted to evaluate the optical quality and clinical patient outcomes, providing a comprehensive overview of the evidence available to date.

In addition to exploring this compendium, we encourage you to visit Ophtec's website (ophtec.com) to learn more about the Precizon Family, the Horizon Family, and our comprehensive portfolio of intraocular lens solutions designed to address any cataract challenge.

Table of Contents

Bench Study

Comparative optical-quality assessment of the Precizon GO intraocular lens with the standard monofocal Precizon Monofocal 04

David J Apple Center for Vision Research, University of Heidelberg, Germany. Data in file 2023.

Effect of tilt and decentration on optical performance of advanced monofocal intraocular lenses. 05

Seung Pil Bang, Keimyung University School of Medicine. Presented at the 2026 Ophtec Korea Online Symposium; March 2026; Seoul, South Korea.

Through-focus response of the Horizon Go IOL 06

Data in file May 2026.

Clinical Study

Clinical outcomes after bilateral implantation of a new enhanced intermediate vision intraocular lens in cataract surgery 07

Multicenter study in Germany, Spain and South Korea. Data in file 2023.

Comparative optical-quality assessment of the Precizon GO intraocular lens with the standard monofocal Precizon Monofocal

David J Apple Center for Vision Research, University of Heidelberg, Germany. Data in file 2023.

OVERVIEW

Study Design
In vitro laboratory study to comprehensively evaluate the performance of the Precizon Go IOL and test it against the Precizon Monofocal IOL through various optical and visual quality metrics.

Study Site(s)
Bench testing at David J Apple Center for Vision Research (Heidelberg, Germany)

Patients
N/A

Methodology
Optical quality parameters such as modulation transfer function (MTF), phase transfer function (PTF) and optical transfer function (OTF) were assessed for an aperture size of 3.0 mm and 4.5 mm, using a cornea lens with 0.28 µm of spherical aberration at 5.15 mm. The weighted optical transfer function (wOTF) was also calculated, and from there postoperative logMAR visual acuity (VA) was predicted. IOL's tolerance to defocus was tested within a +1.0 D to -2.0 D range. A polychromatic point spread function (PSF) was used to assess the size of halos projected by the IOLs at a 4.5-mm aperture.

IOL Type(s)
Precizon Go, model 580 (Ophtec BV) & Precizon Monofocal, model 560 (Ophtec BV).

Key Endpoints
MTF, through-focus MTF, PTF, OTF, wOTF, predicted postoperative logMAR VA, tolerance to defocus and predicted size of halos.

ANALYSIS AND CONCLUSIONS

This study provides the first evidence that Precizon Go IOL can improve the patient's visual function at the intermediate range while ensuring high-quality distance vision.

This study demonstrates that Precizon GO provides good optical performance. The measured optical-quality parameters proved reproducible, confirming the high-manufacturing standards of the lens.

The halo pattern observed during the study predicts that Precizon Go has a low potential to induce significant photopic phenomena.

STUDY RESULTS

- The MTF curves at 4.5 mm show a partial overlap demonstrating a close optical quality between Precizon Go and Precizon Monofocal IOLs (0.19 ±0.01 vs 0.22 ±0.01) ***(Figure 1)***.
- The through-focus (TF) MTF curves at 50 lp/mm demonstrate a more extended TF area of Precizon Go compared to Precizon Monofocal, with a more extended peak width and a secondary peak at about -1.5D ***(Figure 2)***.
- LogMAR VA simulations demonstrate similar results for both IOLs at the far focus, with a peak close to -0.1logMAR. Moreover, a clear advantage of the Precizon Go IOL is shown within the defocus range of -0.50 D to -2 D. At -1.5D Precizon Go shows a predicted improvement of VA close to one-line (0.08 logMAR) over the Precizon Monofocal ***(Figure 3)***.

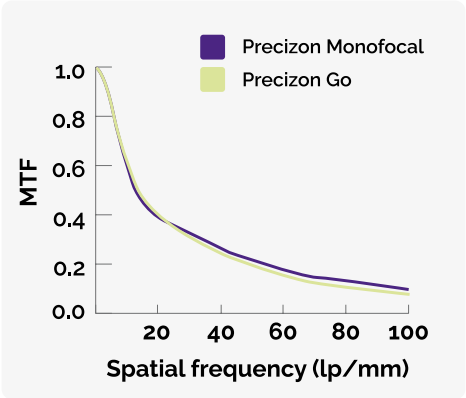


Figure 1. *MTF levels of the studied IOLs at the best focus for a 4.5-mm aperture.*

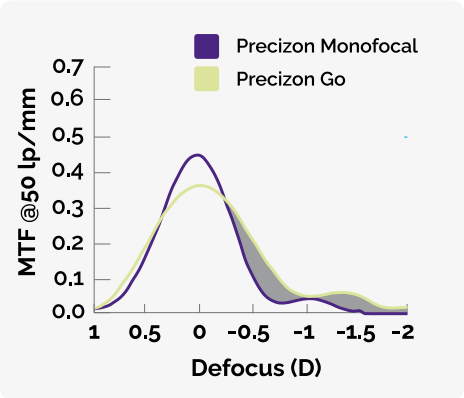


Figure 2. *Through-focus MTFs at 50 lp\mm assessed at 3 mm.*

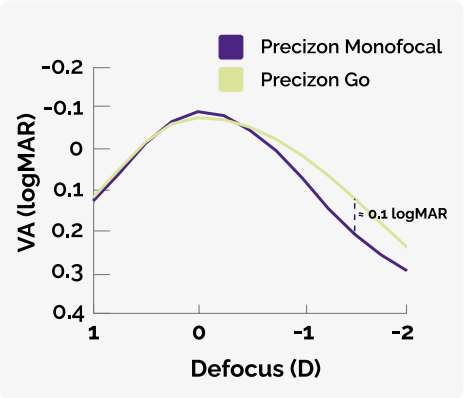


Figure 3. *LogMAR VA simulations as a function of spectacle defocus.*

Effect of tilt and decentration on optical performance of advanced monofocal intraocular lenses

Seung Pil Bang, Keimyung University School of Medicine. Presented at the 2026 Ophtec Korea Online Symposium; March 2026; Seoul, South Korea.

OVERVIEW

Study Design
In vitro laboratory study to evaluate the effects of tilt and decentration on the optical performance of recent advanced monofocal IOLs.

Study Site(s)
Bench testing at Keimyung University School of Medicine (Daegu, South Korea)

Patients
N/A

Methodology
Through-focus modulation transfer function (TF-MTF) curves were measured for an aperture size of 3.00mm and a spatial frequency of 50 lp/mm, using two bench optical metrology systems — Nimo Tempo and PMTF - and a ISO model cornea lens with 0.28 µm of spherical aberration (SA) at 6.00 mm. Changes in TF-MTF curves with induced decentration from 0 to 1mm and induced tilt from 0° to 5° were evaluated. Wavefront Maps were also obtained.

IOL Type(s)
Precizon Go, model 580 (Ophtec BV), Eyhance (Johnson & Johnson) & Isopure (BVI Medical).

Key Endpoints
Through-focus MTF, tolerance to tilt and decentration.

ANALYSIS AND CONCLUSIONS

This study demonstrates that Precizon GO is a premium advanced IOL with a unique optical design that provides exceptional tolerance to decentration and tilt.

This study provides the first evidence that Precizon Go provides a higher tolerance to decentration and tilt than other intraocular lenses of its kind, as Eyhance and Isopure.

STUDY RESULTS

- Decentration-induced changes on the TF-MTF curves at 50 lp/mm show a significant drop at 0.5mm for Eyhance, a gradual decline for Isopure, while Precizon Go shows almost no change in performance with increasing decentration ***(Figure 1)***. This demonstrates a better decentration tolerance for Precizon Go).

- Tilt-induced changes on the TF-MTF curves at 50 lp/mm show a significant drop at 3° for Eyhance, a progressive decline from 1° for Isopure, while Precizon Go maintains its performance with increasing tilt ***(Figure 2)***. This demonstrates a better tilt tolerance for Precizon Go.

- The wavefront profiles at 4.5-mm aperture show a primary SA of -0,3 µm, -0,84 µm and -0,1 µm for Eyhance, Isopure and Precizon Go respectively ***(Table 1)***, demonstrating that Precizon Go has the smallest absolute value of negative spherical aberration among the three.

	Eyhance	Isopure	Precizon Go
Z(4, 0): primary SA (µm)	-0.2970216	-0.8443541	-0.12572212
Z(6, 0): 2ndary SA (µm)	0.0160266	-0.2289301	0.02371539

Table 1. *Wavefront profiles at 4.5-mm aperture.*

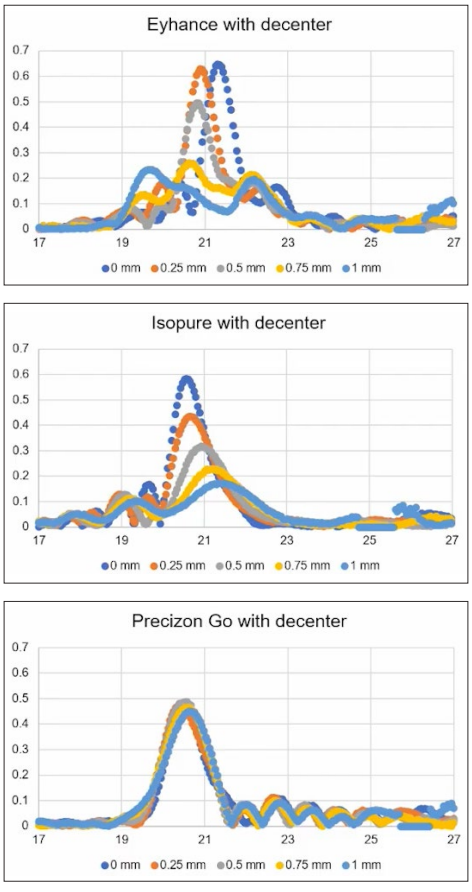


Figure 1. *Through-focus MTFs at 50 lp/mm assessed at 3 mm, showing the effect of decentration up to 1mm.*

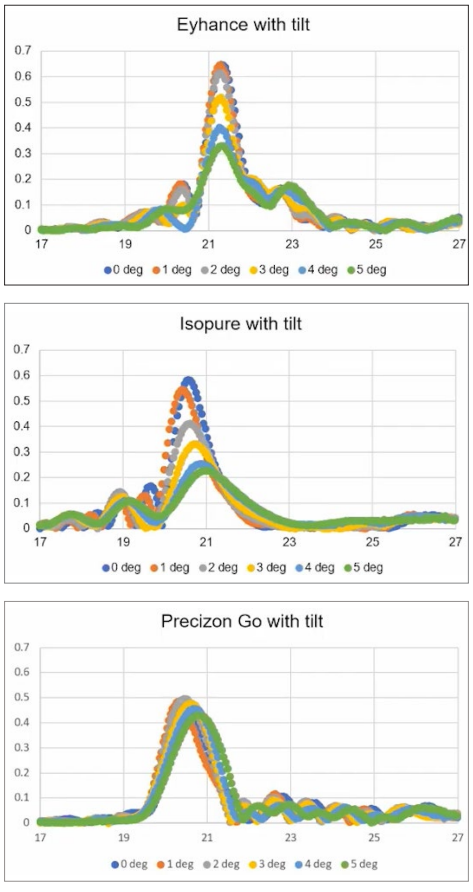


Figure 2. *Through-focus MTFs at 50 lp/mm assessed at 3 mm, showing the effect of tilt up to 5°.*

Through-focus response of the Horizon Go IOL

Data in file May 2026

OVERVIEW

Study Design
A benchtop laboratory study to measure the through-focus response and provide evidence of the extended depth of focus of the Horizon Go IOL compared to the Horizon Monofocal.

Study Site(s)
Bench testing at Ophtec BV (Groningen, The Netherlands)

Patients
N/A

Methodology
Through-focus modulation transfer function (TF-MTF) curves were measured for a special frequency of 10 to 15 lp/mm, using the Nimo Visu and a model eye with 0.28 µm of spherical aberration (SA) and a 4mm aperture. The area under the TF-MTF curve for 50 cpmm was also measured as per ANSI Z80.35 criteria.

IOL Type(s)
Horizon Go, model 680 and Horizon Monofocal, model RS60A (both manufactured by Wuxi Vision Pro Ltd; imported by Ophtec BV).

Key Endpoints
Through-focus MTF, area under the TF-MTF curve.

ANALYSIS AND CONCLUSIONS

This benchtop test verifies that the Horizon Go IOL has a slightly extended depth of focus compared to the Horizon Monofocal.

The extended focus range of Horizon Go is set from 0.0D to -1.75D.

STUDY RESULTS

- The average TF-MTF curves at 4mm and 10 to 15 lp/mm show that Horizon Go has a slightly extended depth of focus compared to Horizon Monofocal ***(Figure 1)***.
- The average TF-MTF curves at 4mm and 10 to 15 lp/mm show that the extended focus range of Horizon Go is set from 0.0D to -1.75D ***(Figure 1)***.
- The measured TF-MTF curve and area under the curve at 3mm and 50 cpmm verifies the extended depth of focus of Horizon Go ***(Figure 2)***.

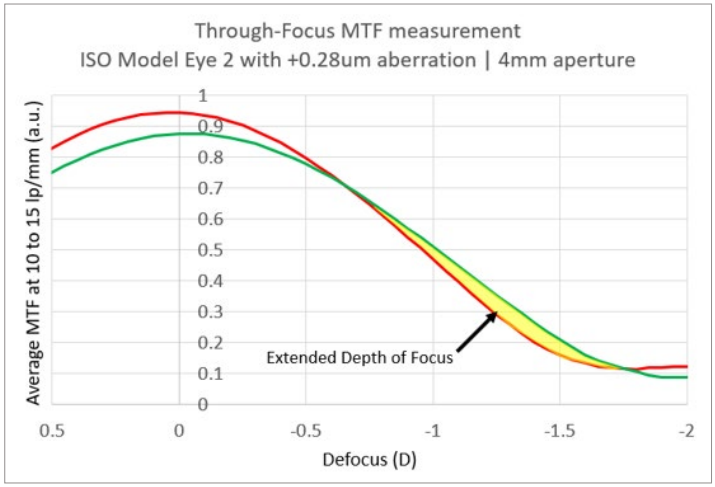


Figure 1. *Comparison of depth of focus Horizon Go and Horizon Monofocal.*

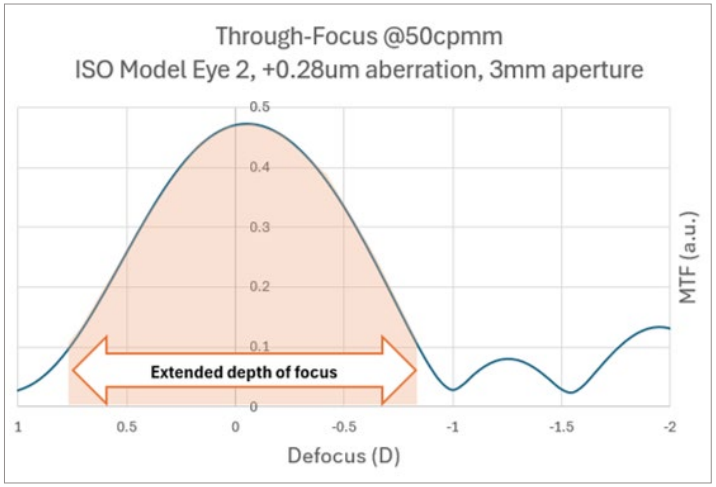


Figure 2: *TF-MTF @50 cpmm and area under the curve demonstrating Extended depth of Focus.*

Clinical outcomes after bilateral implantation of a new enhanced intermediate vision intraocular lens in cataract surgery

Multicenter study in Germany, Spain and South Korea. Data in file 2023.

OVERVIEW

Study Design
Pilot prospective non-comparative case series to evaluate the clinical and visual outcomes, quality of vision and patient satisfaction in patients bilaterally implanted with the Precizon Go IOL.

Study Sites
Seven Multicenter studies in Germany, Spain and South Korea.

Patients
Fifty-two (52) eyes from twenty-six (26) patients bilaterally implanted with a Precizon Go IOL.

Methodology
Preoperative examination and evaluation of outcomes at 1 day and 1 month.

IOL Type
Precizon Go, model 580 (Ophtec BV)

Key Endpoints
1 month postoperatively: uncorrected and corrected distance visual acuity (UDVA, CDVA); best corrected distance intermediate visual acuity at 80 and 66 cm (DCIVA80, DCIVA66); manifest refraction spherical equivalent (MRSE); patient satisfaction and photic phenomena.

ANALYSIS AND CONCLUSIONS

Precizon Go implantation is a safe and effective method to provide cataract surgery patients with enhanced intermediate vision while maintaining excellent vision at distance.

Excellent patient satisfaction was observed with very low rate of photic phenomena.

STUDY RESULTS

VISUAL & REFRACTIVE OUTCOMES

- Mean monocular UDVA and CDVA were 0.92 ± 0.11 snellen and 1.00 ± 0.13 snellen, respectively ***(Chart 1)***.
- Mean monocular DCIVA at 80 and 66cm was 0.75 ± 0.14 snellen and 0.63 ± 0.11 snellen, respectively ***(Chart 1)***.
- 85% of eyes achieved a value of DCIVA of 20/25 snellen (0.1 LogMAR) or better at 80 cm and 92% achieved 20/32 snellen (0.2 LogMAR) or better at 66cm.
- Mean MRSE at 1 month post-op was -0.15 ± 0.29 D ***(Chart 2)***.

PATIENT REPORTED OUTCOMES

- 100% and 96% of patients reported that they were very satisfied or satisfied with their far and intermediate vision respectively
- 85% of patients reported that they "never" experienced halos or glare.

Parameter	Preop (N=52)	1 month post-op (N=52)
UDVA		
Mean ± SD	0,47 ± 0,17	0,92 ± 0,11
Range	0,10 , 1,00	0,63 , 1,00
CDVA		
Mean ± SD		1,00 ± 0,13
Range		0,80 , 1,25
DCIVA@66		
Mean ± SD		0,63 ± 0,11
Range		0,40 , 1,00
DCIVA@80		
Mean ± SD		0,75 ± 0,14
Range		0,32 , 1,00

Chart 1. *Postoperative monocular visual acuity (snellen) results at 1 month.*

Parameter	Preop (N=52)	1 month post-op (N=52)
Sphere (D)		
Mean ± SD	0,77 ± 1,68	0,04 ± 0,31
Range	-4,0, +3,25	-0,75, 1,00
Refractive cylinder (D)		
Mean ± SD	-0,66 ± 0,48	-0,38 ± 0,36
Range	-2,00, 0,00	-1,50, 0,00
SE (D)		
Mean ± SD	0,44 ± 1,74	-0,15 ± 0,29
Range	-4,75, +3,13	-0,88, 0,50

Chart 2. *Monocular refractive and visual acuity results at pre-operative and 1 month.*

Decimal	LogMAR	Snellen (Feet	Snellen (Meters)
1.25	-0.1	20/16	6/4.8
1.0	0.0	20/20	6/6
0.8	0.1	20/25	6/7.5
0.63	0.2	20/32	6/9.5

Chart 3. *Visual acuity conversion chart.*

ophtec

Information on this document is subject to modification. I ©2026 Ophtec bv I A901002171-2